'DETECTION OF FETAL MALNUTRITION BY CLINICAL ASSESSMENT OF NUTRITIONAL STATUS SCORE (CAN SCORE) AT BIRTH AND ITS COMPARISON WITH OTHER METHODS OF DETERMINING INTRA UTERINE GROWTH AND THE STUDY OF MATERNAL FACTORS ASSOCIATED WITH FETAL MALNUTRITION'

DISSERTATION SUBMITTED FOR M.D. DEGREE

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TIRUNELVELI MEDICAL COLLEGE

THE TAMIL NADU Dr.M.G.R.MEDICAL UNIVERSITY

CHENNAI, TAMIL NADU.

CERTIFICATE

This is to certify that this dissertation entitled **'DETECTION OF FETAL MALNUTRITION BY CLINICAL ASSESSMENT OF NUTRITIONAL STATUS SCORE (CAN SCORE) AT BIRTH AND ITS COMPARISON WITH OTHER METHODS OF DETERMINING INTRA UTERINE GROWTH AND THE STUDY OF MATERNAL FACTORS ASSOCIATED WITH FETAL MALNUTRITION'** submitted by **Dr.M.MUTHU RAMA SUBRAMANIAN** to the faculty of Paediatric Medicine, The Tamil Nadu Dr.M.G.R. Medical University, Chennai in partial fulfillment of the requirement for the award of MD Degree Branch VII (Paediatric Medicine), is a bonafide research work carried out by him under our direct supervision and guidance.

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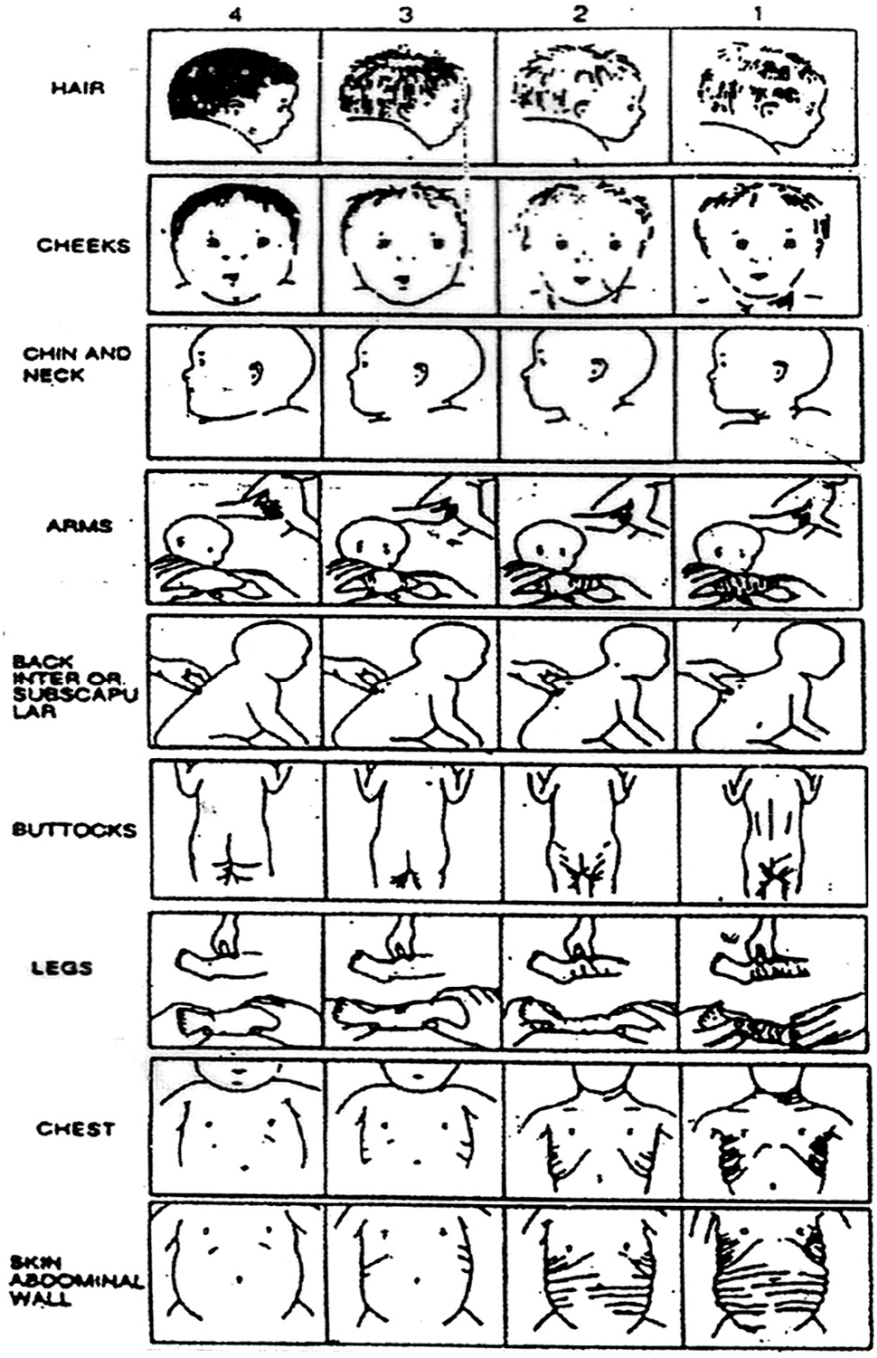
ANNEXURE:1

CANSCORE



The Nine Signs for Clinical Assessment of Nutrional (CAN) Status in the Newborn

1. Hair

   Large amount, smooth, easily groomed (4).

   Thinner, some straight, ”staring” hair (3)

   Still thinner, more straight, “staring” hair which dose not respond to brushing (2)

   Straight “staring” hair with depigmented stripe (flag sign) (1)

2. Cheeks

   Progression from full buccal pads and round face (4), to Significantly reduced bucal fat with narrow, flat face (1)

3. Neck and Chin

   Double or tripe chin fat fold, neck not evident (4); to thin chin. No fat fold, neck with loose, wrinkled skin, very evident (1)

4. Arms –Full, round, cannor elicit ‘accordion: folds or lift folds of skin from elbow or tricep area (4); a striking “accordion” folding of lower arm, elicited when examiner’s thumb and fingers of the left hand grasp the arm just below the elbow of the baby and thumb and fingers of the examiners right hand circling the wrist of the baby are moved towards each other; skin is loose and easily grapsed and pulled away from the elbow.

5. Legs

   Like arms

6. Back

   Difficult to grasp and lift skin in the interscapular area (4); to skin loose, easily lifted in a thin fold from the interscapular area (1)

7. Buttocks

   Full round gluteal fat pads (4); to virtually no evident gluteal fat and skin of the buttocks and upper posterior high loose and deeply wrinkled (1).

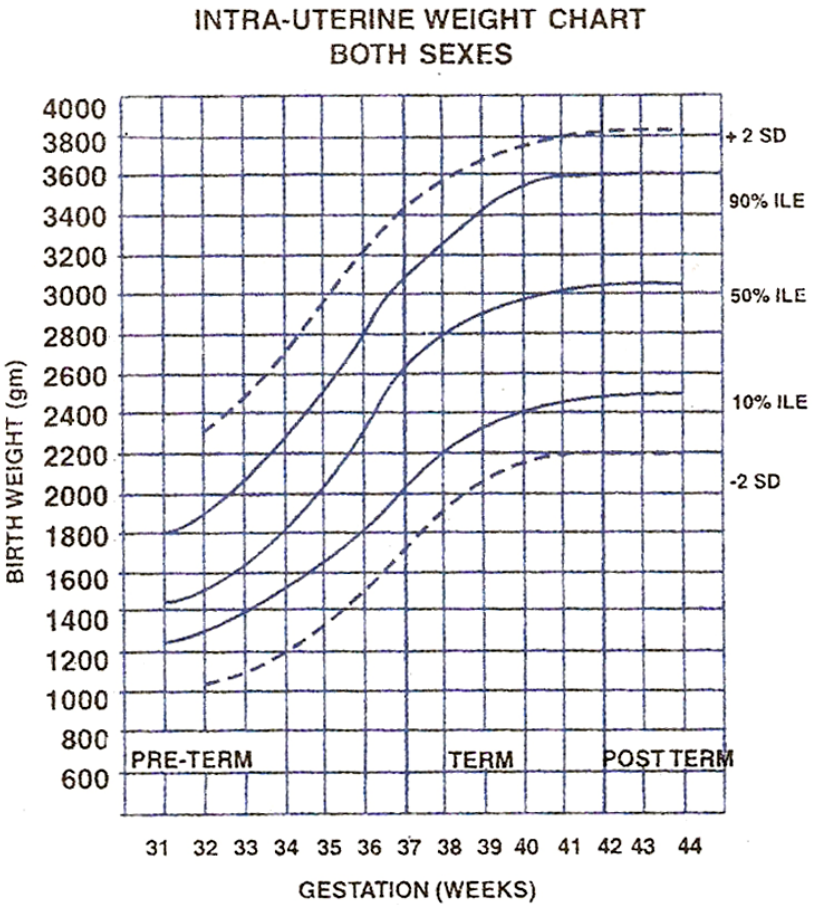
8. Chest

   Full round ribs not seen (4); to progressively prominence of the with obvious loss of inter costal tissues (1)

9. Abdomen

   Full, round, no loose skin (4); to distended or scaphoid, but with very loose skin, easily lifted wrinkled and "accordion' folds demonstrable.

2.AIIMS CHART



3.AMERICAN STANDARD PERCENTILE CHART

TABLE 38–1 Smoothed Percentiles of Birthweight (g) for Gestational Age in the United States Based on 3,134,879 Single Live Births

	Percentile				
Age (wk)	*5th*	*10th*	*50th*	*90th*	*95th*
20	249	275	412	772	912
21	280	314	433	790	957
22	330	376	496	826	1023
23	385	440	582	882	1107
24	435	498	674	977	1223
25	480	558	779	1138	1397
26	529	625	899	1362	1640
27	591	702	1035	1635	1927
28	670	798	1196	1977	2237
29	772	925	1394	2361	2553
30	910	1085	1637	2710	2847
31	1088	1278	1918	2986	3108
32	1294	1495	2203	3200	3338
33	1513	1725	2458	3370	3536
34	1735	1950	2667	3502	3697
35	1950	2159	2831	3596	3812
36	2156	2354	2974	3668	3888
37	2357	2541	3117	3755	3956
38	2543	2714	3263	3867	4027
39	2685	2852	3400	3980	4107
40	2761	2929	3495	4060	4185
41	2777	2948	3527	4094	4217
42	2764	2935	3522	4098	4213
43	2741	2907	3505	4096	4178
44	2724	2885	3491	4096	4122

From Alexander and associates (1996), with permission.

WEIGHING MACHINE STANDARDISED TO ZERO ERROR

WEIGHING OF A NEW BORN BABY

LENGTH OF THE BABY BEING MEASURED

MEASURING OF HEAD CIRCUMFERENCE

MEASURING MID ARM CIRCUMFERENCE

INSTRUMENT USED IN ANTHROPOMETRY VARIABLE

MEASUREMENTS

(FIBER GLASS MEASURING TAPE AND INFANTOMETER)

FETAL MALNUTRITION

INTRODUCTION

AIM OF THE STUDY

REVIEW OF LITERATURE

METHODS AND MATERIALS

OBSERVATION

DISCUSSION

RESULTS

CONCLUSION

BIBLIOGRAPHY

MASTER CHART

INTRODUCTION

DEFINITION

FETAL MALNUTRITION:

It is a clinical state characterized by obvious intra uterine loss or failure to acquire normal amounts of subcutaneous fat and muscles (10). The term fetal malnutrition was coined by Scott and Usher (25). A 0.005mg zygote grows exponentially to 3000 grams term baby within a short span, which accounts for 65 million percent increase in size. The fetal growth rate is 30-35 grams/day at 34 weeks. (Williams et al,). Intra uterine weight gain is linear from 30 – 38 weeks at a rate of about 200 grams per week. (Klaus et al (36)). As the weight gain is greatest during fetal life any growth faltering due to various factors will result in fetal malnutrition.

SMALL FOR GESTATIONAL AGE NEONATES:

Small for gestational age infants are classically defined as having a birth weight that is more than two standard deviations below the mean or less than the 10th percentile of a population-specific birth weight versus gestational age plot.

SGA infants can be the result of normal but slower than average rates of fetal growth, such as those constitutionally small but not abnormal infants whose parents, siblings, and more distant relatives are small (38).

SGA infants also can be the result of abnormally slow fetal growth that is caused by patho physiologic conditions or diseases. Because growth is one of the essential features of the fetus, nearly any aberration of biologic activity in the fetus can lead to growth failure. Thus, small size at birth can be either a normal outcome or one that is a result of intrinsic or extrinsic factors that limit fetal growth potential (Avery's Neonatology). So it is clear that mere classification of neonates as S.G.A. gives little or no information regarding the nutritional status of the baby. While fetal malnutrition is obvious clinically by absence or loss of muscles and subcutaneous fat. Since neonatal morbidity and mortality is more closely related to nutritional status of newborn at birth than to the birth weight for gestational age, a clinical assessment of nutritional status score (CAN score)(10) was developed to differentiate malnourished from appropriately nourished babies. The study is aimed to asses the prevalence of fetal malnutrition and to determine if any of the commonly used anthropometric parameters can reliably detect the malnourished neonates identified by CAN score by comparing them.

Intrauterine Growth Restriction:

IUGR is defined as a rate of fetal growth that is less than normal for the population and for the growth potential of a specific infant. IUGR therefore produces infants who were malnourished. (37). So it is appropriate to use this terminology when the fetus is in utero.

It is important to recognize fetal malnutrition because of the high incidence of neonatal morbidity like neonatal asphyxia, meconium aspiration syndrome, persistent pulmonary hypertension in newborn, neonatal hypothermia, neonatal hypoglycemia, hypocalcaemia, polycythemia, hyper viscosity syndrome, gastro intestinal perforation, acute renal failure, immunodeficiency, increased risk of sepsis and death of the newborn and long term sequelae like low intelligence quotient, higher needs for special education, neurological handicaps, mental retardation, learning disorders, seizures later in childhood and fetal onset of adult disease(37). The reference criteria used for defining small for gestational age babies has been very variable. The cut off levels used have been -2 SD or the 10th percentile (3-5). The concept of small for gestational age as defined by low birth weight for gestational age needs reappraisal since a proportion of malnourished infants will in fact have a birth weight >10th Percentile(7).

A large number of growth charts, based on different populations with different inclusion criteria have been developed and in use. This complicates or invalidates comparisons between studies and populations. Ideally, local growth curves should be obtained from babies of healthy mothers belonging to the high socio-economic group after exclusion of maternal and fetal conditions which are known to affect the growth of the fetus. But in reality we don't have intra uterine growth charts which can be

used as international standards. There is also draw backs such as the effects of gender, order of birth, birth weight of previously born babies and other maternal determinants of fetal malnutrition, on the weight for gestational age assessment. So these factors should be taken into consideration before commenting about birth weight of newborn baby. The Ponderal index (P.I.) and mid arm/head circumference (MAC/HC) ratio are the two other measurements of body proportionality used to identify at risk malnourished infants. But each has its own drawbacks (8, 9). These indices which are based on anthropometric variables also vary with gender and other factors. So these methods do not identify all cases of fetal malnutrition which indicate a clinical state that may be present at almost any birth weight (10).

Since neonatal morbidity and mortality are more closely related to nutritional status of newborn at birth than to the birth weight for gestational age, a clinical assessment of nutritional status (CAN score)(10) was developed to differentiate malnourished from appropriately nourished babies.

AIM OF THE STUDY

1. To study the prevalence of fetal malnutrition in term newborns babies born in Tirunelveli medical college hospital using CAN score and other methods.
2. To determine if any of the commonly used anthropometric parameters can reliably detect the malnourished neonates identified by CAN score by comparing them.
3. To study the gender difference in anthropometric variables and the indices derived from them.
4. To study the difference between regional and international standard weight for gestational age growth charts.
5. Study of maternal factors associated with cases detected as Fetal malnutrition by CAN score:

REVIEW OF LITERATURE

More than 18 million infants born in the developing world have low birth weight. 50 percent are in South Asia. Out of this more than 80 percent are being born in India. (UNICEF, Jan 2009). In fact, more than 96 per cent of low-birth weight babies are born in the developing world. In south Asia 27% of babies were born with birth weight less than 2500 gms. South Asia and sub-Saharan Africa combined account for more than three quarters (78 per cent) of low-birth weight infants in the developing world. South Asia alone accounts for more than half (55 per cent), and is also the region where most infants are not weighed at birth. (Child info; monitoring the situation of children and women. UNICEF, Jan 2009). India alone is home to more than a third of all low-birth weight infants in the developing world. (State of the World's Children- 2000, UNICEF.). The incidence of low birth weight (LBW) babies (< 2500 g) continues to be high in India at about 30% in contrast to 5-7% in developed countries(2000-2002,World health statistics). Preterm babies account for only 10% LBW babies, the rest being term intrauterine growth restricted (IUGR) infants in developing countries(2). According to Dr Ashworth, from Centre for Human Nutrition, London School of Hygiene and Tropical Medicine, London it was estimated that for term infants weighing 2000-2499 g at birth, the risk of neonatal death is 4 times higher than for infants weighing 2500-2999 g,

and 10 times higher than for infants weighing 3000-3499 g. The risk of post neonatal death in term infants weighing 2000-2499 g is estimated to be 2 times higher than for infants 2500-2999 g, and 4 times that of infants weighing 3000-3499 g.

FETAL GROWTH

From a weight of about 0.005 mg at conception, zygote grows rapidly to achieve an average weight of 3000 g at term accounting for almost 65 million percent increase in size. The rate of growth in the normal fetus varies with gestational age, with an increasing exponential curve in the first trimester, a linear curve in the second and most of the third trimester, and a decreasing exponential curve after 36 weeks of gestation (49). During first trimester, growth is characterized by differentiation of various organs. Organogenesis is complete by 10 to 20 weeks of gestation. At about 8 weeks, embryo weighs approximately 1.0gms and measures 2.5cm and by the end of 12 weeks it weighs 14 g and measures 7.5cm. Subsequently there is rapid increase in the weight and dimensions of the fetus accompanied by increasing functional maturity of various body organs. During the first 16 weeks there is rapid increase in cell number (phase of hyperplasia). At 15 weeks fetal growth rate is 5 grams /day. During second trimester of pregnancy, increase in the length of the fetus is proportionately greater as compared to increase in weight. By the end of 28 weeks, fetal weight is about 1000 g and crown heel length is 35cm. In the

second trimester there is both cellular hyperplasia and hypertrophy. The fetal growth rate is 15-20 grams/day at 24 weeks. During last trimester there is rapid increase in the weight due to predominant cellular hypertrophy and size of the fetus imposing considerable nutritional demands on the mother. Most of the fat and glycogen deposition takes place during this phase. The fetal growth rate is 30-35 grams/day at 34 weeks. (Williams et al, 1982). Intra uterine weight gain is linear from 30 – 38 weeks at a rate of about 200 grams per week.(Klaus et al (36)). At 40 weeks, an average Indian baby weights 2800 g and has crown heel length of 48 cm and head circumference of 34cm. The brain growth is much faster during fetal life compared to somatic growth. The birth weight of a baby is about 5 percent of an adult weight but his brain weight is 70 percent of the adult brain weight. Boys grow faster than girls. The impact and outcome of growth impairing insult depends upon its timing in relation to specific phase of growth. Interference with the growth of fetus during the embryonic period is associated with permanent retardation of growth potentiality of the fetus because of less quota of body cells. When an insult operates during the period of growth characterized by increase in cell size alone, the affected fetus would have normal number of small sized cells. These infants with malnourished or small cells can be rehabilitated effectively by providing optimal nutrition after birth. They grow fast and catch up with their growth deficit in due course of time. However, if an

intrauterine constraint operates over a longer period of time when increase in both cell number and size is taking place, the organism would have relatively less number of small sized cells. On nutritional rehabilitation, these infants do grow but they are unable to catch up with their peers who did not encounter any intrauterine growth constraints. Intrauterine malnutrition which operates mostly during second half pregnancy produces profound affect on somatic and organ growth. Body weight is significantly reduced because of lack of subcutaneous fat and muscle mass. Skeletal growth is less affected but there may be delay in the appearances of epiphyseal centers at the distal ends of femur and proximal end of tibia. Brain, heart and lungs are least affected by intrauterine malnutrition. Brain growth may not be spared if malnutrition is severe and prolonged. Other viscera such as liver, spleen, thymus and adrenals are severely reduced in size during states of under nutrition. According to Gruenwald P, in the article Growth of the human fetus, normal growth and its variation (28), from 28-38 weeks growth in weight is linear. The curve tends to flatten out and this flattening is due to interruption in the placental supply line as term is approached. The supply line is hampered least in population with a low incidence of growth restricting factors and most in those with a high incidence of growth restricting factors. This finding was substantiated by mukherjee et al in 1983. They have showed that the lag in rate of growth of Indian low birth weight babies compared to western standards between 34

- 44 weeks. He also found that the rate of fetal growth is comparable to western standards up to 34 weeks (50).

Classification of small for Dates Babies

The babies with intrauterine growth restriction do not constitute a homogenous group and are composed of at least three types of babies.

Malnourished small for dates babies (Asymmetric IUGR)

The fetus gets malnourished during the latter part of gestation due to placental dysfunction and appears long, thin and marasmic. Head circumference and brain weight are unaffected or show minimal reduction while internal organs, such as liver is grossly shrunken, so that brain/ liver weight ratio is more than five. Head circumference is generally more than 3 cm bigger than chest circumference. Due to loss of subcutaneous fat, skin is loose and often hangs in folds at buttocks. The ponderal index can be calculated as follows:-

$P.I = \text{eight in grams} / (\text{Length in cm})^3 \times 100$

The growth restriction is mainly due to reduction in the size of cells whereas the numbers of cells are unaffected. Thus, they retain the potentiality for normal growth on nutritional rehabilitation.

Hypoplastic small for dates babies (Symmetric IUGR): Intrauterine infections and certain genetic and chromosomal disorders exert their adverse influence from early embryonic life and result in reduced growth potential of the fetus. The baby is proportionately small in

all parameters including the head size. They have a high incidence of congenital anomalies including abnormal palmar creases and dermatoglyphics. Their cell populaton is also reduced, resulting in permanent mental and physical growth restriction.

Mixed small for dates babies. They are the outcome of adverse intrauterine environmental influences operating from early or mid pregnancy. These infants, though small for the period of their gestation, neither look obviously malnourished nor grossly hypo plastic. They show varying degrees of reduction in cell population and size. The constitutionally small babies of small mother also fall into this category.

COMMON DETERMINANTS OF INTRA UTERINE GROWTH RESTRICTION:

MATERNAL FACTORS:

Socio – economic status: Socio –economic status encompasses family income, occupation, maternal education, size of dwelling etc. In a study named the effect of social deprivation on birth weight, excluding physiological and pathological effects, conducted by Wilcox et al found that most socially deprived mother had the smallest infants.

Racial and ethnic differences: There is some evidence to suggest that there is genetic or constitutional predisposition for giving birth to LBW babies. In USA, the Caucasian child at birth weighs more than the child of Negroid origin. As compared to the Caucasians, Indian or

Pakistani mothers in UK give birth to infants with a relatively lower weight. It has been shown that babies born to mothers of Indian origin had lower mean birth weight than those born to Malaysian or Chinese mothers.

Previous Obstetrical history:

Primipara mothers are at a distinctly higher risk of producing a LBW baby especially due to IUGR. On the other hand, birth weight, is also adversely affected in grant multipara women. Previous history of spontaneous abortions, still births or neonatal deaths is important risk factors for delivery of a LBW baby. Inter pregnancy interval of < 13 months is associated with increased risk of giving birth to a LBW baby.

Antenatal care: It is not the number of antenatal visits but the quality of antenatal care that has been shown improves birth weight and survival of newborn babies.

Nutritional Factors

Maternal weight and height: They are determined not only by nutritional status but also by genetic, ethnic and constitutional factors,. Healthy well nourished tall mother is likely to give birth to a healthy normal weight baby. The health and growth of the fetus is mostly dependent upon the health of mother (rather than father) because she is both the seed as well as the soil in which baby is nurtured for 9 months. Pre – pregnancy maternal weight of < 40 kg and maternal height of < 145 cm are associated with significant risk of LBW. In India, we are faced with

a large number of malnourished, small and short mothers who tend to produce small babies because of maternal ill health, frequent pregnancies and malnutrition. If a baby happens to be a girl, she grows up in neglect and discrimination during infancy, develops frequent infections, is fed poorly and is likely to have a poor adolescent growth spurt. She will grow to become a small woman who will perpetuate the cycle of LBW in the next generation. It appears that adverse environmental factors may become genetic and constitutional when they operate over several generations, and this trend cannot be reversed by merely giving nutritional supplements during pregnancy alone. It is important to improve the status of women in our society, reduce neglect of girls and provide them with adequate nutrition during infancy, adolescence, pregnancy and lactation.

Weight gain during pregnancy: Gestational weight gain represents laying down of maternal fat stores, growth of breasts and uterus, increased plasma volume and growth of the fetus, placenta and amniotic fluid. The relative risk of gestational weight gain of less than 7 kg for causing IUGR is 1.98 among well nourished women. it is estimated that population attributable risk for IUGR may be as high as 40 percent or more in women of developing countries who gain less than 7 Kg of weight during pregnancy.

Energy and protein intake: During states of acute starvation or food deprivation as a consequence of nutritional calamities or during war, the

birth weight is reduced by about 250 g of the expected weight at birth when compared to mean birth weight of infants born before and after the disaster (stein et al in the study the Dutch hunger winter 1944-1945.oxford university press, 1975). The adverse effects of food deprivation are most marked when it operates during last weeks of pregnancy. Intervention studies has also shown that when mother are provided additional 200 kcal and 20 g proteins per day during last 6 – 8 weeks of pregnancy their off springs on an average weight 110 g more as compared to the non supplemented controls. The incidence of LBW babies is reduced to half by food supplementation during pregnancy. It is understandable that salutary effects of food supplements during pregnancy would be even greater in populations with lower nutritional status and higher incidence of LBW babies.

Energy expenditure and Physical activity: Strenuous physical activity during third trimester of pregnancy may adversely affect fetal growth because energy is consumed by the mother for physical labor and denied for fetal growth. Physical activity entails energy expenditure, may reduce uterine blood flow when physical work is conducted in a upright posture and may cause psychological stress.

The role of micronutrients: There is enough evidence to suggest that nutritional anemia during pregnancy is associated with compromised fetal growth. Supplements of iron (60mg / day of elemental iron) and folic acid

(500ug/d) during second half of pregnancy is associated with mean improvement in birth weight by 300g. There is some evidence to suggest that zinc deficiency during pregnancy may affect fetal growth though more well controlled prospective studies are needed. The effects of various micronutrients within the body are interrelated.

Placental dysfunction and disorders: Pregnancy induced hypertension, toxemia of pregnancy and post maturity are important causes of fetal growth retardation. Toxemia of pregnancy more common among primi gravida mothers belonging to low socio economic status. Multiple pregnancy is associated with fetal growth restriction because two fetuses can be nourished satisfactorily upto 35 weeks of gestation. Beyond this period, single placenta is unable to sustain the normal growth of two fetuses. Placental mosaicism,, embolization, abnormal cord insertion, choriangiomata and abruption placenta are recognized to cause fetal growth restriction.

Chronic systemic disease: Hypertension chronic heart disease, especially when associated with congestive heart failure or cyanosis, renal disease, bronchial asthma, collagen vascular disease, diabetes mellitus and sickle cell disease etc are associated with poor fetal growth because of impaired energy availability due to increased maternal catabolism or poor nutrient transfer to the fetus across the placenta or both.

Maternal infections: cytomegalovirus is associated with direct cytolysis and loss of functional cells. Rubella infection causes vascular insufficiency by damaging the endothelium of small vessels and also reduces cell division. (Pollack et al in the study IUGR definition, classification and etiology, clin obstet gynecol 35:99, 1992). Malaria, tuberculosis, urinary tract infection and recurrent diarrhea / dysentery during pregnancy are associated with fetal growth restriction. In endemic areas, prophylaxis against malaria during pregnancy has been shown to improve birth weight on an average by 170g. The infections during pregnancy should be promptly identified and adequately treated with appropriate antibiotics.

Colonization of maternal genital tract by Chlamydia trachomatis, Mycoplasma hominis, Ureaplasma urealyticus and bacterial vaginosis have been found to be associated with birth of relatively smaller babies both by virtue of prematurity and IUGR.

Maternal substance abuse. Drug abuse during pregnancy is associated with several adverse effects on the fetus including developmental defects and compromised fetal growth. The incidence of LBW babies doubles if the pregnant woman smokes more than 20 cigarettes per day. Tobacco chewing which is common among rural and tribal women in several stats in India is also associated with IUGR. There is evidence to suggest that if a pregnancy woman chews 400mg of tobacco every day, the birth weight of her baby is reduced by upto 542 grams

compared to control women. If a mother consumes two alcoholic drinks every day during pregnancy, the birth weight of the baby is reduced on an average by 155g.

Environmental pollutants: Insecticides and pollutants may adversely affect the birth weigh of the babies.

FETAL CONDITIONS

Sex: The female infants are lighter at birth compared to male babies.

Chromosomal and genetic disorders: Trisomy syndromes, Turner syndrome and various types of short limbed dwarfism are associated with hypoplastic babies. Some babies are classified as primordial dwarfs due to genetic or constitutional factors.

Intrauterine Infections: Rubella, cytomegalic inclusion disease and toxoplasmosis are classical examples in this group. Thee infants are hypoplastic at birth and suffer from physical growth retardation and neuromotor sequelae during childhood.

Therapeutic Interventions for Intrauterine Growth Restriction

Early onset fetal growth Restriction

When life threatening congenital malformations is identified during first trimester, medical termination of pregnancy is recommended. Identification of TORCH infections during early pregnancy does not have any therapeutic, implications. However, when maternal toxoplasmosis is

diagnosed, treatment of the mother with spiramycin, sulfadiazine and pyrimethamine has been shown to reduce the risk of congenital toxoplasmosis.

Late onset fetal growth restriction

When fetal growth restriction is identified after 28 weeks of gestation, abnormalities in the utero-placental unit and placental dysfunction are common incriminating factors. There is no consensus in the literature regarding the most effective management strategy. The following interventions have been tried mostly in experimental animals with variable results.

Bed Rest

Bed rest is usually recommended to conserve energy and improve circulation of blood in the uteroplacental unit.

Material parenteral nutrition

There are sporadic reports that intravenous hyperalimentation with 10 percent glucose and 12 percent amino acids to women with fetal growth restriction may improve the birth weight. It has not received universal acceptance due to lack of convincing evidence for its benefits.

Antibiotic therapy: It has been incriminated that genital colonization with mycoplasma and Chlamydia may be associated with both prematurity and intrauterine growth retardation.

Pharmacologic therapy

It has been shown that low dose – aspirin (1-2 mg/ kg . day single dose) inactivates platelet cycloxygenase enzyme and results in decreased synthesis of thromboxane (Tx A2) while it has no effect on prostacyclin) (PGI_2) which is a vasodilator. The results of various therapeutic trials for prevention and treatment of intrauterine fetal growth restriction are conflicting. Low – dose aspirin has been shown to cause a modest reduction in the incidence of pre eclampsia but it use may be associated with increased incidence of abruption placenta. Some obstetrical anesthetists view low dose aspirin use as a relative contraindication for regional anesthesia for cesarean section. Based on current data from large randomized controlled trials, one can conclude that the efficacy of aspirin has yet to be proven in the prevention and treatment of IUGR. Dipyridamole, a phosphodiesterase inhibitor causes delay in the degradation of cyclic adenosine monophosphate (cAMP) whih renders platelets more sensitive to degradation and enhances synthesis of prostacyclin. However, most clinical trials have not demonstrated any additional therapeutic benefits by adding dipyradimole to low – dose (60mg/ day) aspirin regime.

B – Adrenergic agonists are credited to cause myometrial relaxation with decreased resistance to uterine blood flow. They are also known to have direct vasodilatory effect on uterine perfusion. But clinical trials with

B agonists have failed to demonstrated consistent benefits to enhance fetal growth.

Atrial natriutretic peptide (ANP) is an endogenous peptide synthesized in the right atrium that has direct diuretic, natriuretic and vasodilator effects. The role of ANP in the pathogenesis of IUGR resulting from uteroplacental insufficiently has been studied recently. Studies have shown that plasma ANP levels are significantly higher while there is 80% reduction in the number of ANP receptors in pregnancies complicated by IUGR. It has been shown that continuous low dose infusion of ANP to pregnant guinea pigs in which uterine artery is ligated, is associated with 26% increase in blood flow to the placenta. Further research is needed to elucidate the role of ANP in the pathogenesis, of IUGR before human trials are conducted.

Recent advances in the understanding of somatotrophic axis has unfolded the role of insulin like Growth factors (especially IGF – I) in various experimental animal models of IUGR. It has been shown that there is a decrease in the level of circulating IGF – I and increase in IGF binding proteins (IGFBP) when IUGR is induced in experimental animals. IGF -1 molecules have structural similarity to proinsulin and is bound to at least six specific ICF – binding proteins that regulate its effect. It has been recently documented that cord blood ICF- 1 levels are significantly decreased in IUGR babies. The therapeutic utility of exogenous IGF – 1 to

improve fetal growth has been studied in experimental animals with positive results. Because maternal IGF – 1 does not cross placenta, the mechanism for beneifical effect of exogenous IGF – I on fetal growth is unclear. There is a need to study stomatotrophic axis in human pregnancies complicated by IUGR, before clinical trials can be launched for administration of IGF – 1 through the mother or to the fetus directly.

Intermittent abdominal decompression

It has been shown that intermittent abdominal decompression is associated with improvement in uteroplcental blood flow and fetal oxygenation. The abdominal decompression is produced by wearing a plastic suit over a rigid frame in which pressure can be reduced with a vacuum. A negative pressure (70-mmg Hg) is applied for 30 seconds every minute for 30 minutes twice a day. The method is cumbersome and no controlled trials have been conducted till date. The Meta – analysis of three studies of this treatment modality has documented significant reduction in perinatal mortality without any significant improvement in birth weight.

Early delivery after ensuring pulmonary maturity

Early delivery is indicated to ensure intact survival of the baby whenever there is late onset fetal growth restriction with uteroplacental dysfunction. The indications for delivery include severe oligohydramnias or lack of fetal growth over a period of two weeks especially when fetal

well being is at stake as assessed by biophycial profile, NST and Doppler velocimetery studies. During labour upto 50% of growth restricted fetuses are likely to exhibit evidences of fetal distress. Delay in delivery may lead to in – utero death of the fetus, fetus distress, birth asphyxia and adverse neuromotor consequences, when a baby is delivered prematurely, he is likely to suffer from consequences of immaturity (like RDS, IVH, NEC etc) although there is some evidence that chronic stress in IUGR babies may be associated with elaboration of endogenous corticosterioids that may enhance pulmonary maturity. Nevertheless, antenatal administration of corticosterorids is recommended whenever delivery is being contemplated before 34 weeks of gestation in a growth restricted fetus. Administration of antenatal corticosteroids is associated with significant decreases in the incidence of RDS, necrotizing enterocolitis, and periventricular hemorrhage.

Common problems in Small for Dates Babies

Their clinical problems and outcome are very different as compared to preterm babies. They need to be screened and watched for the following clinical problems.

1. Fetal hypoxia and intrapartum death due to placental dysfunction.
2. Severe both asphyxia.
3. In utero aspiration and meconium aspiration syndrome.
4. Symptomatic hypoglycemia and hypocalcemia

5. Congenital malformations.
6. Pulmonary hemorrhage due to unknown cause
7. Polycythemia due to chronic hypoxia.
8. Thermoregulation may unsatisfactory due to scanty brown fat.
9. Hyperbilirubinemia
10. Vulnerability to infections.
11. Poor growth potential on follow up
12. Increased risk of development of diabetes mellitus, hypertension and coronary artery disease in adult life.

In preterm small for dates babies, combined hazards of immaturity and intrauterine growth retardation would be manifest.

Management

Early delivery is indicated if there is arrest of fetal growth and pulmonary maturity is satisfactory. Fetal hypoxia may necessitate emergency cesarean section and the pediatrician should be prepared to receive an asphyxiated baby. The suctioning of glottic area under direct vision is essential if baby is meconium stained and the baby is non vigorous. The baby should be screened for any congenital malformations. Early and adequate feeding must be ensured to prevent hypoglycemia Breast feeding should be initiated immediately after birth. Symptomatic polycythemia should be managed with partial exchange with plasma or physiological saline. The blood glucose and hematocrit should be

monitored during first three days of life. When adequately fed, they do not loss weight and start gaining weight after 2 to 3 days of age. Their initial weight gain is rapid which subsequently slows down after three months of age.

Prognosis

The immediate outlook for small for dates babies is better than the preterm babies of identical weight but their mortality is 2 to 3 times higher when compared with appropriately grown babies of identical maturity. Depending upon the duration and severity of intrauterine environmental constraints, postnatal physical growth may be reduced. It has been shown that body weight of SGA infant at 2 years of age is about 10 percent lower as compared to AGA infant of identical maturity. The hypoplastic babies remain permanently physically and mentally handicapped. Malnourished small for dates babies with symptomatic hypoglycemia and polycythemic during neonatal period are also likely manifest evidences of brain damage later in life. Long-term follow up studies of uncomplicated malnourished small for dates babies have also shown higher incidence of clinical manifestations of minimal brain dysfunction, learning disability and suboptimal physical growth.

Prevention of LBW Babies

The relatively high incidence of perinatal mortality in developing countries directly correlates with the higher incidence of LBW

babies. Over 80 percent of all neonatal deaths and 50 percent of all infant deaths are limited to LBW babies. Prevention and reduction in the incidence of LBW babies is the most important strategy to reduce perinatal and infant mortality rates and improve the quality of life among those who survive.

DIAGNOSIS OF SMALL FOR GESTATIONAL AGE BABIES AT THE TIME OF BIRTH

Discrepancy in intra uterine growth charts:

According to the Standard definition of small for gestational age (SGA) babies, the 10th weight centile has been the most commonly used cut-off for defining SGA births. This implies that the 10 percent of babies with the lowest weight for gestation are regarded as SGA. It is highly unlikely that, in a country like India where low birth weight accounts for more than one third of newborn babies born and that too predominantly term small for gestational age babies. However, not all Small for gestational age babies detected by weight-gestational age chart will always have fetal malnutrition. Women seem to be programmed for having births of a small size will give birth to small babies. So not all SGA babies detected by weight-gestational age charts are malnourished neonates, and some babies detected as appropriate for gestational age babies are still malnourished neonates. According to Morrison et al in his topic perinatal mortality, published in Seminals in perinatology, had mentionad that

normal but small fetuses represent up to 60% of the SGA group, fetuses with congenital anomalies account for up to 15%, and fetuses with true IUGR account for 25% (54). Management varies among these groups. The normal but small fetus is not at increased risk and does not require intervention. The small fetus with true growth restriction may be at high morbidity or mortality risk and may require immediate intervention. The small infant with congenital abnormalities may or may not require intervention. So it is understandable that mere detection of SGA will not give any information regarding nutritional status of the baby. These methods do not identify fetal malnutrition which is a clinical state that may be present at almost any birth weight (10). In the study named by, The effect of intrauterine malnutrition on the term infant: A 14 -year prospective study published in Acta Paediatrica Scandinavia by Hill (55) et al, Thirty-nine percent of fetal malnutrition infants with handicaps, including spastic diplegia, seizures, visual problems, learning disabilities, or mental retardation, had birth weights greater than the 10th percentile on the Denver fetal growth curves. So using weight for gestational age charts alone won't pick up these malnourished neonates for monitoring and anticipatory care.

According to Pam Thomas et al in the study named by a New Look at Intrauterine Growth and the Impact of Race, Altitude, and gender has mentioned that Gestational age had the largest influence on each growth

parameter. Race and gender both had effects on birth weight of the new born baby. Female neonates were smaller than male neonates, and black neonates were smaller than Hispanic and white neonates at each gestational age. In Pam Thomas et al (15) study female babies were 95 gms lighter, 0.6 c.m shorter and had head circumference 0.6 c.m shorter than male babies.

Normal fetal growth varies almost two fold. For example, mean birth weight for neonates born in New Guinea is 2,400 g (40), whereas normal birth weights in other populations can exceed 4,000 g (41) (Avery's Neonatology) . Such variations are related to genetic and environmental factors. These and other normal anthropometric variations must be taken into consideration before diagnosing fetal malnutrition in newborns. The current international reference intra uterine growth curves like Alexander intra uterine growth charts will falsely identify AGA babies as SGA babies in Indian children because of higher cut off weights at each gestational age. Even they may overestimate small for gestational age babies because these growth charts are based on American population which significantly differs from Indian population in terms of mean birth weight and other factors. . A large number of growth charts, based on different populations with different inclusion criteria and constructed according to different methods, have been developed and used; this complicates or invalidates comparisons between studies and populations. So these methods do not

identify fetal malnutrition which indicates a clinical state that may be present at almost any birth weight (10).

In India intra uterine percentile growth curves were published by Gosh .S et al in 1971 and revised by Man Mohan et al in 1990. They have given weight, length, head circumference and norms and curves for ponderal index in percentiles. They have mentioned that head circumference can be used to assess growth and maturity of the baby as a whole. Their growth charts coincided with other western standards intra uterine growth charts during the early part of gestation but differ widely at term. Another Intra uterine growth chart was prepared in All India institute of medical science and published in Indian pediatrics by Singh et al in 1973-1974 in the study intra uterine growth curves of live born single babies and later revised by P.K.Singhal et al in 1991 and subsequently published in Indian pediatrics. Intra uterine growth charts were produced by Matthews Mathai et al (29) in the study of birth weight standards for South Indian babies at CMC vellore and published in Indian pediatrics journal. They have provided intra uterine percentile growth curves which were separately for first born and later born male babies. Also they have provided separate intra uterine percentile growth curves for first born and later born female babies

PONDERAL INDEX:

Growth inhibition early in gestation (e.g. mitotic arrest) would produce an undersized fetus with fewer cell numbers but normal "cell" size. Length would be affected as well as weight, producing a short-for-dates infants or symmetric IUGR. This pattern would be reflected in a normal ponderal index. Whereas, later growth insults would have less effect on total cell number and fetal length but would result in decreased weight and "cell" size. These infants would be long and thin or light for dates, or would demonstrate asymmetric IUGR and low ponderal indices. The concept of proportionate type 1, symmetrical or stunted IUGR with normal ponderal index is unlike disproportionate, type 2 asymmetric or wasted IUGR with low ponderal index. (31, 32, 33, 34 and 35). Therefore Rohrer's ponderal index may be used to distinguish the type of the growth restriction and can be of Prognostic value. An increased risk of postnatal morbidity was demonstrated in infants with growth retardation and low ponderal index compared with the similar group with normal ponderal index. Normal ponderal index is 2.32-2.85g/cm^3; greater than 2.85 as obese and less than 2.32 as thin (17). Miller and Hassanein (56) proposed that a full term infant is malnourished if his PI is < 2.2. Infants with high ponderal indices are relatively heavy for length (or equivalently, relatively

short for weight), while those who have low ponderal indices are thin and have low weight for length.

According to Man Mohan, Shiv Prasad et al in the study named by intra uterine growth curves in north Indian babies, they have established norms and curves for ponderal index for Indian population. In that they have given ponderal indexes values of 2.256 at 38weeks and 2.262 at 39weeks as 10th percentile. Ponderal index is useful to identify disproportionate growth restriction. As per Man Mohan et al study published in Indian pediatrics journal in November 1991 Ponderal index value <2.2 can identify neonates of 2000 grams or below with greater accuracy (sensitivity 85.08% and specificity 91.47%). Disproportionately grown infants constitute a high population who are more prone to perinatal and metabolic complications. Ponderal index relies on the principle that length is spared at the expense of weight during period of acute malnutrition; weight and length velocities may be proportionately impaired in infants with chronic insult in utero and these babies may be misclassified by PI.

MID ARM CIRCUMFERENCE:

According to Georgieff et al study MAC/HC ratio was more useful in identifying symptomatic growth restricted and growth accelerated infants (20). MAC/HC is independent of race and sex (21, 22). The mean

value for the mid-arm circumference/head circumference ratio was 0.31 (SD = 0.02) for both sexes in the study named Mid-arm circumference and mid-arm circumference/head circumference ratio in term newborns conducted by Figueira Bettina et al (48). MAC/HC ratio <0.27 were considered as IUGR (20). Meadow and colleagues (57) concluded that the MAC/HC ratio, independent of birth weight, readily discriminated the late gestation growth restricted baby. Their study showed that this ratio can be used as a reliable test to identify neonates whose growth is restricted, even when their weight does not fall below 10th percentile. But those babies whose head circumference is reduced because of proportionate growth restriction might not be identified.this is theshortcoming of MAC/HC.

CAN SCORE:

Clinical assessment of nutritional status (CAN score) is assessed by the superficial readily detectable signs of malnutrition in the newborn as described by Metcoff (10). (Annexure 1). Maximum score of 4 is awarded to each parameter with no evidence of malnutrition and lowest of 1 is awarded to parameter with the worse evidence of malnutrition. The CANSCORE ranges between 9 (lowest) and 36 (highest). Findings in the mid ranges as illustrated (annexure -1) come in between these two extremes of scores. CAN score is independent of birth weight and gestational age. (10, 25, 26, 27 and 28). In fetal malnutrition, the subcutaneous fat and underlying muscles are diminished and the skin of

arms, legs, elbows, knees and inter scapular regions is very loose. In severe fetal malformation, the neonate may look “emaciated” or “marasmic” as the skin appears “several sizes” too large for the baby. While CAN score (clinical assessment of nutritional status at birth in newborn babies) are independent of these factors and can be used for international comparison of malnourished new born babies. In CAN score there were six inspectory findings and three signs to be elicited. In the category hair, when the hair was in large amount, silky and easily groomed four marks were awarded. When the hair was straight with depigmented stripe, then the score awarded was one. In the cheek category, four marks were awarded for full buccal pads and round face. When there was reduced buccal fat with narrow flat face one mark was awarded. In the neck and chin category, when the neck was not evident and the chin contains double or triple chin fat fold four marks were awarded. When the neck was very evident with wrinkled skin and there was no fat fold in chin one mark was awarded. In the chest category when the chest was full, round and ribs not seen four marks were awarded. When there was prominent visibility of ribs with obvious loss of inter costal tissues one mark was awarded. In the abdomen category, when the abdomen was full distended with no loose skin four marks were awarded. When the abdomen was scaphoid in shape with very loose skin, wrinkled, easy to lift the loose skin and accordion folds demonstrable. In the back category, when it was difficult to grasp and lift

skin in interscapular area four marks were awarded. When the skin is loose, easily lifted in a thin fold from the interscapular area one mark was awarded. In the buttock category, four marks were awarded for full round gluteal fat pads and one mark for virtual absence of gluteal fat with skin of upper posterior thigh and buttock loose and deeply wrinkled. In severe fetal malnutrition accordion folds are demonstrable in both forearm and legs by examiner grasping the arm just below the elbow with his left hand and the examiner's right hand circling the wrist of the baby are moved towards each other. The skin was loose and easily grasped and pulled away from elbow. A total of maximum was 36, minimum score was 9. A CAN score of < 25 was used to define malnutrition. This score offered the best breakpoint between growth restricted and normal infants as determined by weight for age(10).

DEFICIENCY OF MUSCLE MASS, ADIPOSE TISSUE AND GLYCOGEN CONTENT IN FETAL MALNUTRITION:

Decreased nutrient supply to the fetus results in IUGR which is an adaptation to maintain fetal survival.

Among fetal malnourished newborn, nitrogen and protein contents are reduced for body weight, primarily as a result of deficient production of muscle mass. Infact, muscle mass are often reduced below that of fat as a fraction of body weight (58).

In Between 26 and 30 weeks of gestation, nonfat and fat components contribute equally to the carbon content of the fetal body (59 and 60). After that period, fat accumulation exceeds that of the nonfat components. By term, the deposition of fat accounts for more than 90% of the carbon accumulated by the fetus. The rate of fat accretion is approximately linear between 36 and 40 weeks of gestation, and, by the end of gestation, fat accretion ranges between 1.6 and 3.4 g/d/kg. At 28 weeks of gestation, it is slightly less and ranges between 1.0 and 1.8 g/d/kg Term infants will have 15% to 20% of their body weight as fat content. While in term infants with fetal malnutrition fat content may be less than 10% of body weight (58). Glycogen content is markedly reduced in SGA infants, both in the liver and in the skeletal muscles (61). This is as a result of lower fetal plasma concentrations of glucose and insulin, which are the principal regulators of glycogen synthesis. These findings substantiate the findings of Scott, Usher and Metcoff regarding fetal malnutrition.

Low glucose concentration in malnourished fetuses limits tissue glucose uptake directly by diminished mass action and indirectly by limiting fetal insulin secretion and thus the effect of insulin to promote tissue glucose uptake by skeletal muscle, heart, adipose tissue, and liver. Decrease in fetal plasma insulin concentration initially may allow fetal glucose production to take place, thereby providing glucose for both fetal and placental needs, but subsequently, combined with hypoglycemia,

results in increased protein breakdown and decreased protein accretion (63, 64, and 65).

Circulating concentrations and tissue-specific expression of growth Factors such as IGF-I and IGF-II also are decreased during fetal hypoglycemia (66), which may contribute to increased fetal protein breakdown and decreased rates of fetal growth.

Thus, fetal hypoglycemia in response to a decrease in maternal glucose supply acts to maintain fetal glucose supply, but it also leads to lower anabolic hormone concentrations, which limit the rate of fetal growth, thereby decreasing fetal nutrient needs. Fractional rate of protein turn over per unit wet weight of fetus is several fold higher at 20 to 24 weeks of human gestation. Such high rates of protein turnover require a much greater rate of amino acid supply and energy than at term, when fetal protein turnover rate is much lower. These conditions result in a 50% higher rate of net protein accretion and fractional rate of fetal growth at mid gestation than at term. Clearly, amino acid and energy deficits will affect the growth rate of the fetus at earlier stages of gestation, when fetal growth normally is very rapid much more than at term, when fetal growth rate is slower (Avery's neonatology).

According to the report of the IDECG group on definitions, Classifications, causes, mechanisms and prevention of IUGR (19) they have mentioned about the need to develop reference data for birth length and

head circumference in relation to gestational age, and for birth weight in relation to birth length. Because the concepts of 'wasting' and 'stunting' have proven useful for categorizing undernourished infants and older children, an attempt should be made to quantify the mortality and morbidity risks associated with 'wasted' and 'stunted' newborns and to develop indicators for their classification(39).

In naveen sankhyan et al study (16), CAN score detected 27.97 percentage newborn term babies as IUGR. This was done in himachal pradesh, India. Deodhar et al reported 19.6 percentages of newborn babies as IUGR as assessed by CAN score. In O.J.Adebami et al study (53) conducted in nigeria 18.8 percentage of newborn babies were IUGR as detected by CAN score method. In Sanjay Mehta et al study (51)conducted in lady hardinge medical college hospital, New Delhi, the IUGR cases detected by CAN score was 40 percent.

METHODS AND MATERIALS

This study was carried out on 400 consecutive term neonates delivered at the Labour ward, Dept. of Obstetrics and Gynaecology, Tirunelveli medical college Hospital, Tirunelveli.

INCLUSION CRITERIA:

Criteria for infants to be included in the study were as follows:

1. Live born, singleton term neonates,
2. Only infants whose hospital stay exceeded 24 hours of age,
3. No major congenital malformation.

EXCLUSION CRITERIA:

1. All preterm,
2. Babies born with congenital malformation,
3. Twins & other multiple gestations,
4. Babies with cephal hematoma, sub galeal bleed.

NEONATAL ANTHROPOMETRY:

Weight of the nude newborn baby was recorded on an electronic weighing scale at the time of birth of the baby. Birth weight was taken in grams to the nearest 10 grams. Zero error was adjusted before weighing each new born baby. Length was measured with infantometer within 24-48 hours of birth. Newborn baby was placed supine on the infantometer and the assistant was asked to keep the vertex of the newborn baby's head

snugly touching the fixed vertical plank with face facing upwards. The legs were fully extended by pressing over the knees, and feet were kept vertical at 90 degree, the movable pedal plank of infantometer was snuggly apposed against the soles and length was read from the scale to the nearest 1 mm. Head circumferences was recorded within 24 - 48 hours of life using non stretchable fiber glass measuring tape by encircling the maximum occipital prominence and supra orbital ridges. Measurements were taken to the nearest 1mm. Mid upper arm circumference was measured at the midpoint between the tip of acromion and the olecranon process in the left upper arm with a non stretchable fibre glass measuring tape to the nearest 1mm. Expanded new Ballard scoring was used for gestational age assessment within 24-48 hours of birth. Ponderal index (P.I.) and mid arm/head circumference (MAC/HC) ratios were calculated from these measurements. Rohrer's ponderal index [P.I.], which was defined as 100 times the birth weight (in grams) divided by the cube of birth length (cm^3 Therefore Rohrer's ponderal index may be used to distinguish the type of the growth restriction and can be of prognostic value. An increased risk of postnatal morbidity was demonstrated in infants with growth restriction and low ponderal index compared with the similar group with normal ponderal index. Miller and Hassanein (56) proposed that a full term infant is malnourished if his PI is < 2.2. Ponderal index is useful to identify disproportionate growth retardation.

According to Georgieff et al study MAC/HC ratio was more useful in identifying symptomatic growth restricted and growth accelerated infants (20). MAC/HC is independent of race and sex (23, 24). The mean value for the mid-arm/head circumference ratio was 0.31 (SD = 0.02) for both sexes in the study named by Mid-arm circumference and mid-arm/head circumference ratio in term newborns conducted by figueira Bettina Barbosa Duque et al(48). MAC/HC ratio < 0.27 was considered as fetal malnutrition (20).

A weight for age below 10th percentile was used for defining Intra uterine growth restriction. Growth curves developed at the All India Institute of Medical Sciences and subsequently published in Indian Pediatrics journal by Singhal PK et al (18) were taken as regional standards (16 and 51) and Alexander et al (13) birth weight for gestational age percentile chart was taken as international standard. There are no intra uterine growth curves for universal use. Racial, ethnic, gender difference, environmental influences and previous history of mother giving birth to a small for gestational or large for gestational age baby all will have impact on the growth curves. So there is significant difference between Indian and other western babies' weight. Hence to highlight the difference between regional and international standards both the Indian standard growth curves and international growth standards were used in this study.

Clinical Assessment of Nutrition Status Score (CAN score):

Clinical assessment of nutritional status was done within 48 hours on the basis of the superficial readily detectable signs of fetal malnutrition in the newborn as described by Metcoff (10) (Table I). It was independent of birth weight and gestational age. (10, 25, 26, 27, & 28). In fetal malnutrition the subcutaneous tissues and underlying muscles are diminished and the skin of arms, legs, elbows, knees and interscapular regions is very loose. In severe fetal malnutrition the neonate may look "emaciated" or "marasmic" as the skin appears "several sizes" too large for the baby. In CAN score newborn with fetal malnutrition were assessed and scored at birth. Features of fetal malnutrition were sought for in each baby using nine 'superficial' readily detectable signs as described by Metcoff(10). Maximum score of 4 was awarded to each parameter with no evidence of malnutrition and lowest of 1 was awarded to parameter with the worse evidence of malnutrition. Findings in the mid ranges as illustrated (annexure -1) come in between these two extremes of scores. The CANSCORE ranges between 9 (lowest) and 36 (highest). The score consisted of nine 'superficial' readily detectable signs of fetal malnutrition. This was based on inspection and hands–on estimates of loss of subcutaneous fat and muscles. Hairs, Cheeks, Neck and Chin, Arms, Back, Buttock, Legs, Chest and abdomen were examined and then scored. This was purely clinical assessment like Ballard or Dubowitz assessment of gestational age scores. It is very easy to carry out by the bedside. Babies

with CANSCORE below 25 are regarded as babies with fetal malnutrition s (10). This score offered the best breakpoint between growth restricted and normal infants as determined by weight for gestational age.

Study of maternal factors associated with cases detected as Fetal malnutrition by CAN score:

As this is only an addition to the main aim of this topic maternal factors like education of the mother, age of the mother, parity of the mother and maternal illnesses complicating the current pregnancy were recorded and analyzed with fetal malnutrition cases detected by CAN score.

Statistical analysis and observations:

The data were analyzed to determine the sex wise anthropometric indices and the significance were tested by student t test. The sex wise determinants of IUGR were compared for their significance by the proportion of Z test. The sensitivity and specificity of IUGR determinants were computed with positive predictive and negative predictive values of ponderal index, weight for gestational age and mid arm circumference to head circumference ratio were calculated with CAN score. The Chi-square test was used to determine the association between CAN score and other indices. The chi-square values were confirmed by the kappa statistics. The above analysis and interpretation were performed with the use of statistical package of S.P.S.S. (13.0) at 5% level of significance.($p = 0.05$).

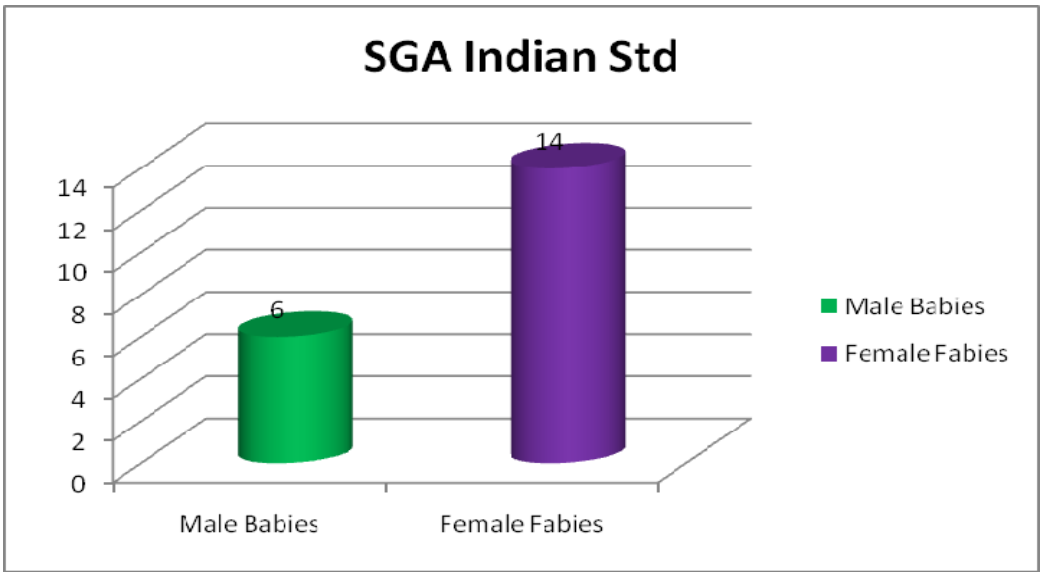
OBSERVATION

I. FETAL MALNUTRITION BABIES DETECTED BY VARIOUS METHODS :

TABLE-1 : SGA BABIES DETECTED BY INDIAN STANDARD, BIRTH WEIGHT FOR GESTATIONAL AGE CHART (AIIMS CHART)

Methods Indian std	**Male**		**Female**		**Total**	
Total babies	**n = 209**		**n = 191**		**n=400**	
	No	%	No	%	No	%
S.G.A babies	6	2.9	14	7.3	20	5.0

Bar Chart 1

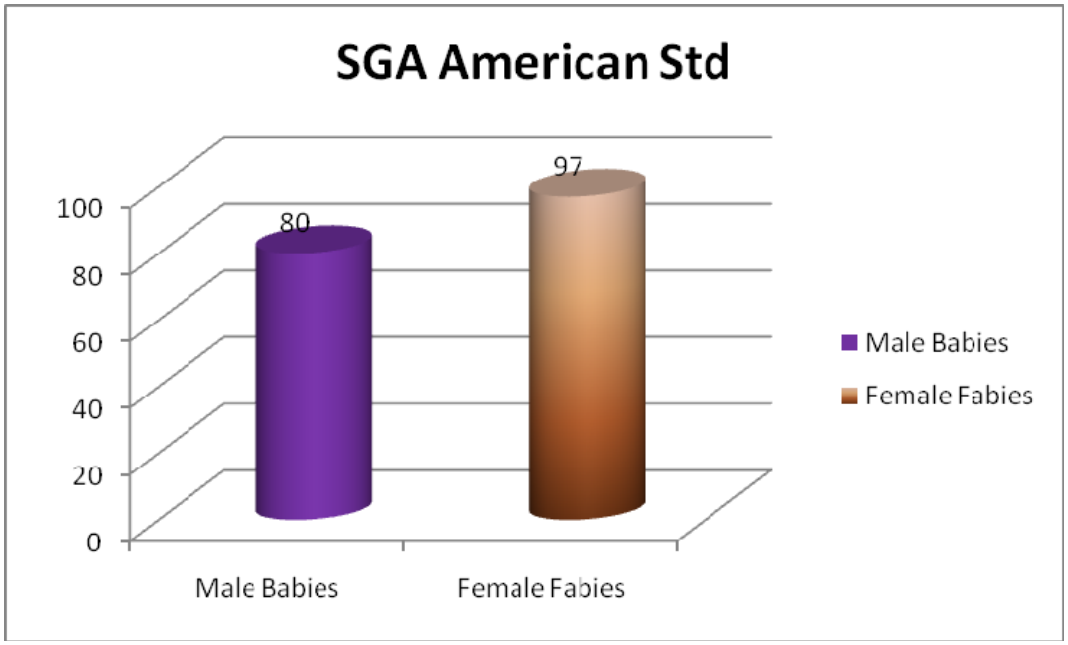


20 new born babies were detected as SGA by Indian standard,weight for gestational age charts. Out of these 20 babies, 6 babies were male babies and 14 babies were female babies. Female babies were lighter than male babies.(Table – 6). So more number of female babies fall below the cut off point for the particular gestational age. As a result more number of female babies were detected as SGA.

TABLE-2 : SGA BABIES DETECTED BY INTERNATIONAL STANDARD, BIRTH WEIGHT FOR GESTATIONAL AGE CHART (ALEXADER ET AL)

Methods American std	**Male**		**Female**		**Total**	
Total babies	**n = 209**		**n = 191**		**n=400**	
S.G.A. babies	No	%	No	%	No	%
	80	38.2%	97	50.7%	177	44.2%

BAR CHART-2

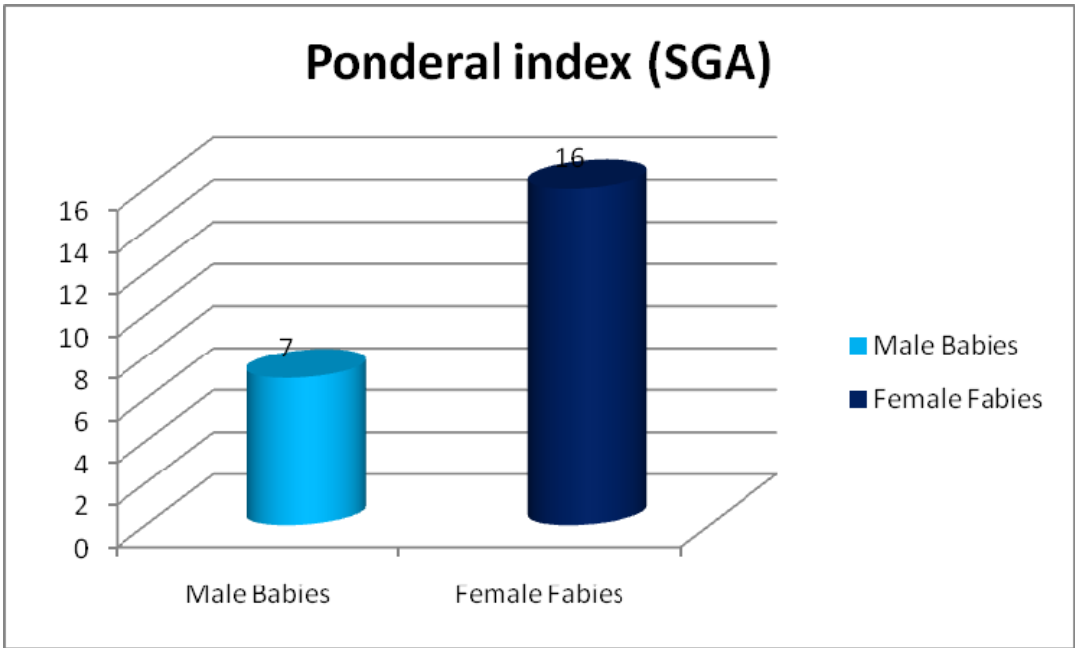


Based on American standard, weight for gestational age charts 80 male babies and 97 female babies were detected as SGA. As the female babies were lighter than female babies. (Table – 6) more number of female babies were detected as SGA. The international standard curves had higher cut off weights at each gestational age. Hence their use resulted in detection of more number of SGA babies.

TABLE-3 : FETAL MALNUTRITION BABIES DETECTED BY PONDERAL INDEX

Methods Ponderal index.	**Male**		**Female**		**Total**	
Total babies	**n = 209**		**n = 191**		**n=400**	
	No	%	No	%	No	%
Fetal malnutrition cases	7	3.4	16	8.4	23	5.8

BARCHART-3

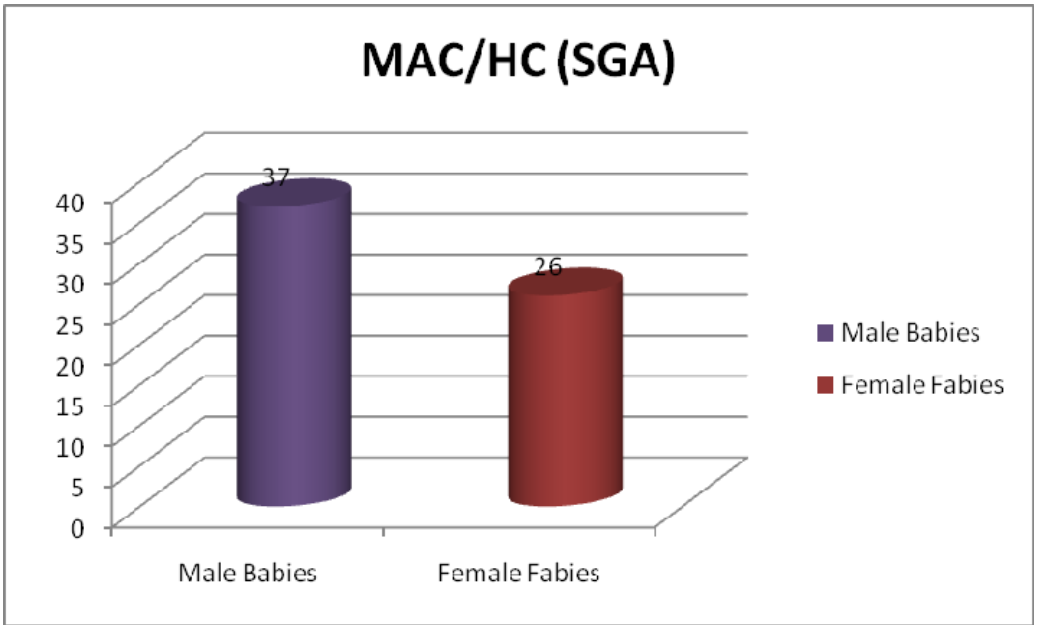


Ponderal index identified 23 babies as fetal malnutrition babies. Out of 23 babies 7 babies were male babies and 16 babies were female babies. As observed in (Table -6 and 7), female babies were lighter and shorter than male babies. So ponderal index which was based on weight and length detected more number of female babies.

TABLE-4 : FETAL MALNUTRITION BABIES DETECTED BY M.A.C./ H.C.

Methods MAC/HC	**Male**		**Female**		**Total**	
Total babies	**n = 209**		**n = 191**		**n=400**	
	No	%	No	%	No	%
Fetal malnutrition cases	37	17.7	26	13.6	63	15.8

BAR CHART-4

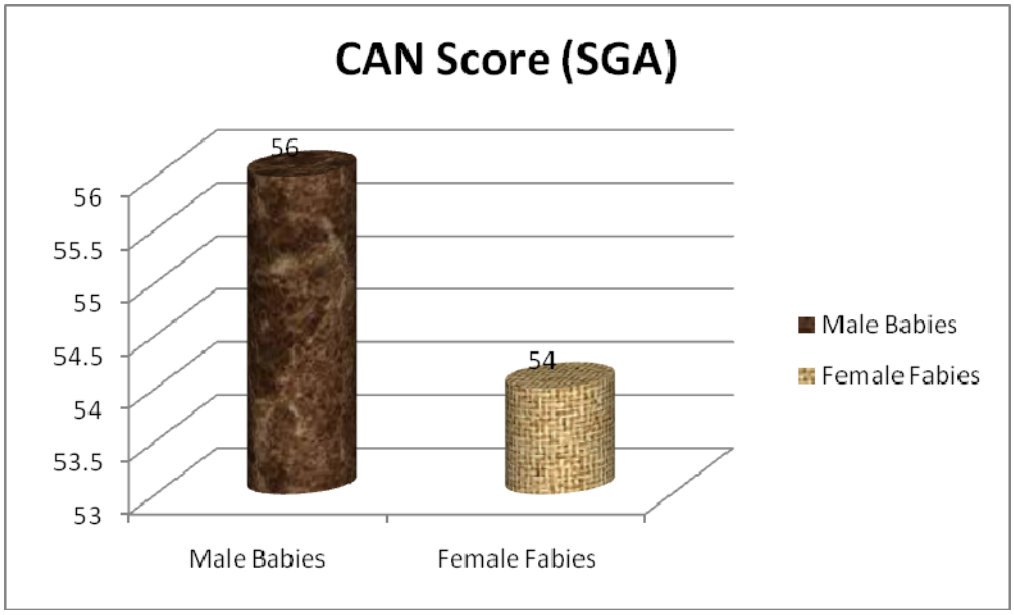


Based on mid arm circumference /head circumference, 63 babies were detected as fetal malnutrition babies. Out of these 63 babies, 37 were male babies and 26 were female babies. As observed in Table - 7, there was no significant difference in mid arm circumference between male and female babies. By using MAC/HC male babies identified as fetal malnutrition babies were more compared to female babies. But there was no statistical significance in this male and female fetal malnutrition cases identified.

TABLE-5 : FETAL MALNUTRITION BABIES DETECTED BY CAN SCORE

Methods CAN Score	**Male n = 209**		**Female n = 191**		**Total n=400**	
	No	%	No	%	No	%
Fetal malnutrition cases.	56	26.8	54	28.2	110	27.5

BAR CHART-5



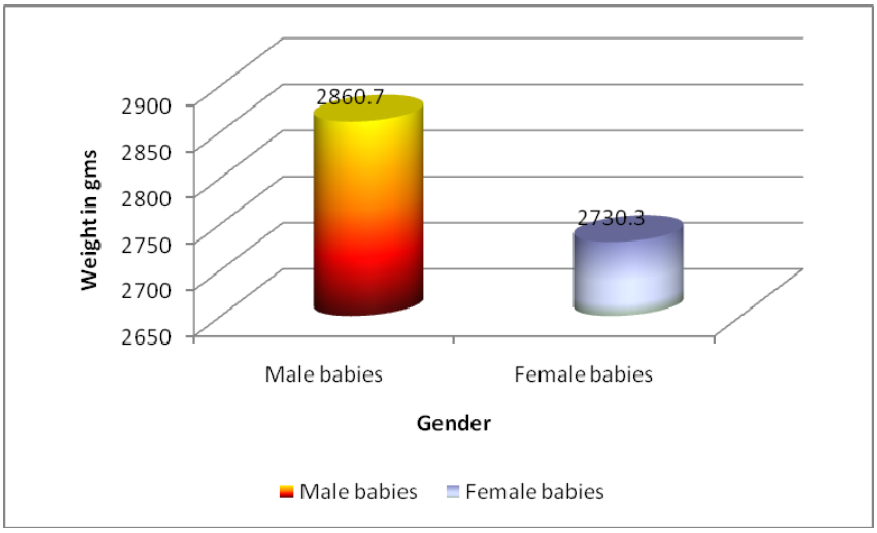
By using CAN score, 110 babies were identified as fetal malnutrition babies. Out of 110 babies, 56 were male babies and 54 were female babies. According to Table - 8, there was no significant difference between male and female fetal malnutrition babies identified by CAN score. Anthropometric variables had no impact on CAN score in the detection of fetal malnutrition babies. Hence CAN score was more reliable than other methods which were based on anthropometric variables.

II. COMPARISON OF VARIOUS ANTHROPOMETRIC MEASURES BETWEEN MALE AND FEMALE BABIES:

Table - 6. : COMPARISON OF WEIGHT BETWEEN MALE AND FEMALE BABIES.

Anthropo metric measure	male (n = 209)		Female (n=191)		mean difference	't'	d.f	significance	Total= A=400	
	mean	S.D.	mean	S.D.					mean	S.D.
Weight (grams)	2860.7	447.2	2730.3	437.6	130.4	2.942	398	P<0.01	2798.3	447.0

Bar chart - 6.

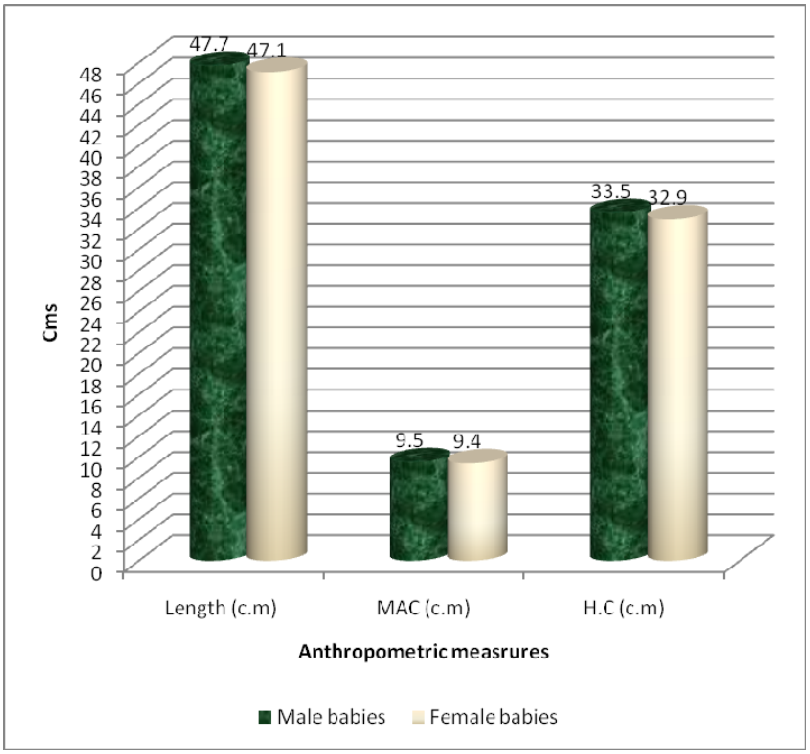


The mean birth weight of the study subjects was 2798.3± 447 kg. The mean birth weights of male and female babies were 2860.7± 447.2kg and 2730± 437.6kg respectively. The difference of the birth weight was statistically highly significant (p<0.01).

TABLE – 7 : COMPARISON OF LENGTH, MID ARM CIRCUMFERENCE AND HEAD CIRCUMFERENCE BETWEEN MALE AND FEMALE BABIES.

Anthropo metric measures	male (n = 209)		Female (n=191)		mean difference	't'	d.f	significance	Total= A=400	
	mean	S.D.	mean	S.D.					mean	S.D.
Length (c.m)	47.7	1.9	47.1	1.9	0.6	2.601	398	P<0.05	47.4	2.0
MAC (c.m)	9.5	0.9	9.4	0.8	0.1	1.120	398	P>0.05	9.5	0.9
H.C (c.m)	33.5	1.3	32.9	1.4	0.6	4.184	398	P<0.001	33.2	1.4

Bar chart - 7



The mean length of the babies was 47.4 ± 2.0 c.m. The mean length of the male babies was 47.7 ± 1.9 c.m. and the same of the female babies were 47.1 ± 1.9c.m. The difference was statistically significant ($p<0.05$). The mean mid arm circumference of total babies were 9.5 ± 0.9. The mean mid arm circumference of male babies was 9.5 ± 0.9c.m and the female babies were 9.4± 0.8 c.m. The observed difference was not statistically significant ($p >0.05$). The mean head circumference of total babies was 33.2 ± 1.4 c.m. The mean head circumference of male babies was 33.5 ± 1.3 c.m. and the same of the female neonates was 32.9 ± 1.4 c.m. The observed difference between the sexes was statistically highly significant.

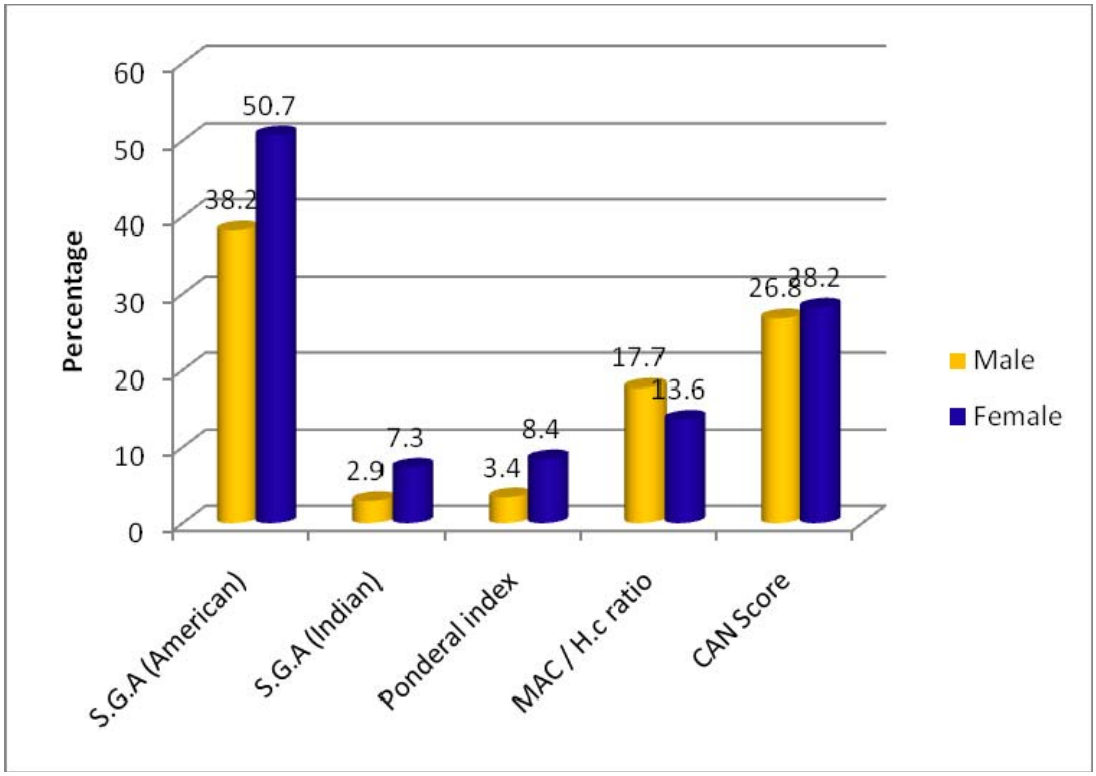
III. **COMPARISON OF MALE AND FEMALE FETAL MALNUTRITION BABIES DETECTED BY VARIOUS METHODS:**

The male and female fetal malnutrition babies which were calculated and assessed by different methods were compared.

Table- 8 : COMPARISON OF MALE AND FEMALE FETAL MALNUTRITION BABIES DETECTED BY VARIOUS METHODS:

Methods	**Male n = 209**		**Female n = 191**		**Difference of Percentage**	**'t'**	**d. f**	**Significance**	**Total n=400**	
	No	%	No	%					No	%
S.G.A Indian std	6	2.9	14	7.3	4.4	1.98	398	P<0.05	20	5.0
S.G.A. American std	80	38.2%	97	50.7%	12.5	2.55	398	P<0.05	177	44.2%
P.I.	7	3.4	16	8.4	5.0	2.11	398	P<0.05	23	5.8
MAC/ H.C ratio	37	17.7	26	13.6	4.1	1.132	398	P>0.05	63	15.8
CAN Score	56	26.8	54	28.2	1.4	0.313	398	P>0.05	110	27.5

Barchart - 8. COMPARISON OF MALE AND FEMALE FETAL MALNUTRITION BABIES DETECTED BY VARIOUS METHODS.



The above table shows the sex wise percentage of fetal malnutrition babies among the study subjects by different methods of defining fetal malnutrition like weight for gestational age (both Indian and international std), Ponderal index, mid arm circumference / head circumference and CAN score.

Based on Indian standard weight for gestational age charts 20 (5%) cases were diagnosed as small for gestational age babies. Among the 20, 6(2.9%) and 14(7.3%) were males and female babies respectively. The difference of SGA between the sexes was statistically significant ($p<0.05$). Fetal malnutrition babies as defined by Ponderal index were 7(3.4%) male

babies and 16(8.4%) female babies. This difference between male and female babies were also statistically significant ($p<0.05$).

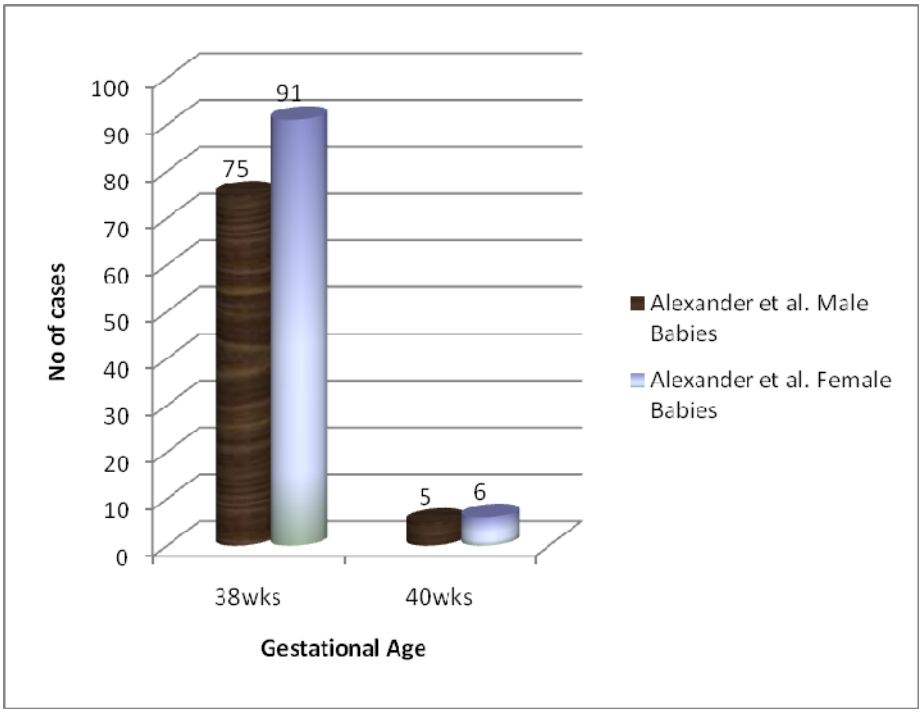
The mid arm circumference between the sexes was not statistically significant, because of that, in respect of mid arm circumference /head circumference ratio between the two sexes was also not statistically significant ($p>0.05$). In CAN score there is no significance difference between female and male malnourished babies. So, CAN score was not depending upon either of the anthropometric indices of the neonates. Hence more non significant between sexes, fetal malnutrition babies were defined by the CAN score.

Table- 9 : SMALL FOR GESTATIONAL AGE BABIES DETECTED BY INTERNATIONAL AND INDIAN STANDARD CHARTS.

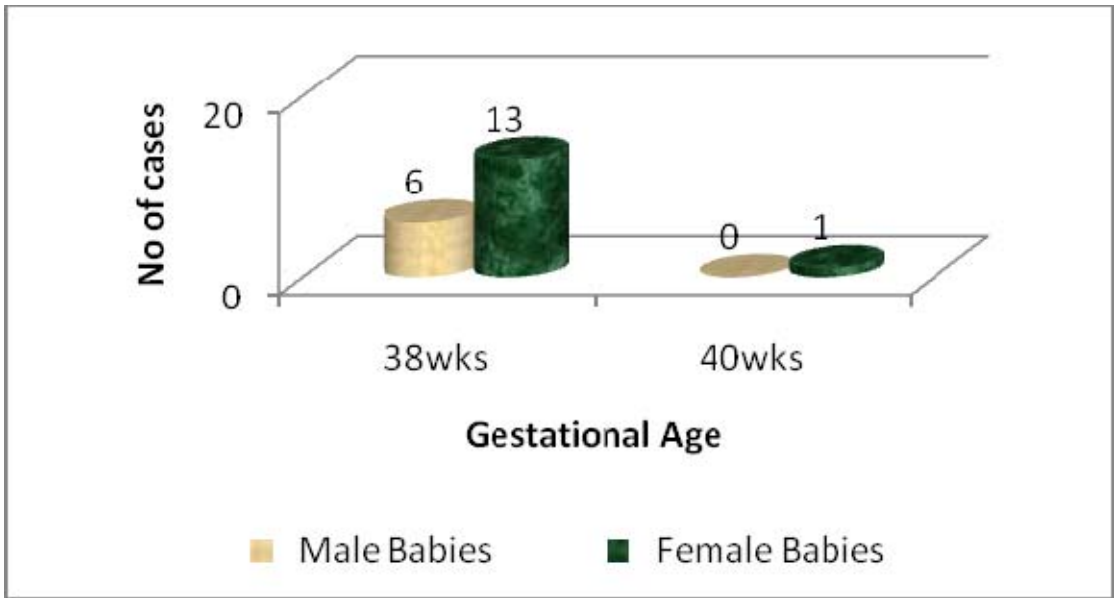
		Alexander et al Growth Chart.				**AIIMS Growth Chart**			
No	**gestational age**	**Male n = 209**		**Female n = 191**		**Male n = 209**		**Female n = 191**	
		No	%	No	%	No	%	No	%
1.	38wks	75	35.9%	91	47.6%	6	2.9%	13	6.8%
2.	40wks	5	2.3%	6	3.1%	0		1	0.5%
	Total	80	38.2%	97	50.7%	6	2.9%	14	7.3%

N=400. Male babies=209, Female babies=191.

Bar chart- 9a S.G.A. BABIES DETECTED BY INTERNATIONAL STANDARD, BIRTH WEIGHT FOR GESTATIONAL AGE CHART (ALEXANDER ET AL).



Bar chart- 9b, S.G.A. BABIES DETECTED BY INDIAN STANDARD BIRTH WEIGHT FOR GESTATIONAL AGE CHART (AIIMS GROWTH CHART)



.

According to American standard birth weight for gestational age charts (Alexander et al), 80 (38.3%) male babies were small for gestational age (S.G.A.). 97 (50.7%) female babies were diagnosed as S.G.A. But in contrast 6 (2.9%) male babies and 14 (7.3%) female babies were diagnosed as small for gestational age by Indian standard growth chart. Based on Alexander et al growth chart the babies identified as small for gestational age were 44.25%. While Indian growth chart identified only 5% of study population as small for gestational age babies. At 38 weeks 10th percentile cut off weight for American and Indian standard charts were 2714 grams and 2200 grams respectively. At 40 weeks 10th percentile cut off weight for American and Indian standard charts were 2929 grams and 2400 grams respectively. Higher cut off weights in international standard, weight for gestational chart at each gestational age was the reason for this difference. So more number of SGA cases were detected by international standard chart. Hence international chart over estimated number of SGA cases in this study.

IV. COMPARING CAN SCORE WITH OTHER MEASURES:

The CAN score was compared with other measures such as weight for gestational age, ponderal index and mid arm circumference /head circumference by measuring sensitivity ,specificity, positive and negative predictive values. **The aim was to detect if any of the commonly used anthropometric parameters can reliably detect these malnourished neonates.**

Table-10.comparison of Indian standard weight for gestational age with CAN score:

	AIIMS chart				Percentage of		Significance	Percentage of		significance
CAN score		SGA	AGA	Total	Sensitivity	Specificity		PPV	NPV	
	Malnourished	20	90	110	100.0	76.3	P<0.01	18.2	100.0	P<0.01
	Well Nourished	0	290	290						
	Total	20	380	400	400					

PPV: positive predictive value.

NPV: negative predictive value.

In the above table-10, 20 cases were diagnosed by weight for gestational age as fetal malnutrition and the 90(81.2%) cases were not diagnosed as fetal malnutrition. In the weight for gestational age the prevalence of fetal malnutrition was only 5%. Because of that the sensitivity and specificity was statistically significant. Similarly the positive predictive value and negative predictive value

were significantly differing. A high proportion of fetal malnutrition cases were missed by weight for gestational age.

Table-11.comparison of Ponderal index with CAN score :

		Ponderal index			Percentage		significance	Percentage		Significance
CAN score		Malnourished	Well Nourished	Total	Sensitivity	Specificity	P>0.05	PPV	NPV	P<0.01
	Malnourished	20	90	110	86.9	76.1		18.2	98.9	
	Well Nourished	3	287	290						
	Total	23	377	400						

In the above table-11, Ponderal index diagnosed 23 (5.8) cases as Fetal malnutrition. Among the 23 cases, 20 (86.9%) cases were diagnosed as fetal malnutrition by both Ponderal index and CAN score and the remaining 3 cases were diagnosed from the 290 cases of well nourished babies as diagnosed by the CAN score.

The sensitivity and specificity percentages were not statistically significant (p>0.05).

Because of the overlapping 3 cases, the positive predictive value and negative predictive value significantly differed. (p<0.01).Ponderal index diagnosed only 20 (18.2%) cases among the 110 cases and 90 (81.8%) cases were missed.

Table -12.comparison of mid arm circumference/head circumference with CAN score.

		MAC / H.C Radio			Percentages of		significance	Percentage of		significance
		Malnourished	Well Nourished	Total	Sensitivity	Specificity	P>0.05	PPV	NPV	P <0.01
CAN	Malnourished	53	57	110	84.1	83.1		48.2	96.6	
	Well Nourished	10	280	290						
	Total	63	337	400						

In the above analysis shown in the table -12 the sensitivity and specificity were not statistically significant (p>0.05).but positive predictive value and negative predictive value were differed significantly (p<0.01). This significant difference was attributed to the effect of high prevalence of Fetal malnutrition cases diagnosed by mid arm circumference/head circumference. Even though only 53 (48.2%) cases were diagnosed as fetal malnutrition among the CAN score screened cases of 110 as Fetal malnutrition. The percentage of missed cases was 51.8% (57 cases). Another demerit of this method was a high proportion of cases 10 (3.4%) were wrongly diagnosed as Fetal malnutrition among the well nourished as screened by CAN score.

V. Association between CAN score with different methods:

The CAN score was associated with the other measurements like Indian std, weight for gestational age, Ponderal index and mid arm circumference /head circumference.

Table-13. Association between CAN score and weight for gestational age, Ponderal index and MAC/H.C.

CAN associated with	Chi-square	d. f	significance	Kappa	significance
Indian std S.G.A	55.502	1	P<0.01	0.244	P<0.01
Ponderal Index	43.269	1	P<0.01	0.227	P<0.01
MAC /HC	120.67	1	P<0.01	0.516	P<0.01

The association of CAN score with other measures were positive as the chi-square value ($p<0.01$). According to the kappa statistic, the association between CAN score and Ponderal index, weight for gestational age had poor agreement since the kappa statistics were below 0.4. The association between CAN score with mid arm circumference/head circumference had fairly good agreement since the kappa statistics (0.516) falls within the range of 0.4 to 0.75

VI. Study of maternal factors associated with cases detected as Fetal malnutrition by CAN score:

TABLE- 14 Association between age of the mothers and fetal malnutrition:

Age group (months)	malnourished		Well nourished		Total	
	No	%	No	%	No	%
<20	2	2	7	2.4	9	2.2
20 – 24	48	43.5	137	47.2	185	46.3
25-29	44	40	112	38.7	156	39
30 and above	16	14.5	34	11.7	50	12.5
Total	110	100.0	290	100.0	400	100.0

As depicted in table -14, 46.3% and 39% of total babies were born in the age groups 20-24 and 25-29 years respectively. 43.5% of fetal malnutrition cases were coming in the 20-24 age groups. 40% of fetal malnutrition cases were coming in the 25-29 age groups.

Bar Chart 14: Association between age of the mothers and fetal malnutrition:

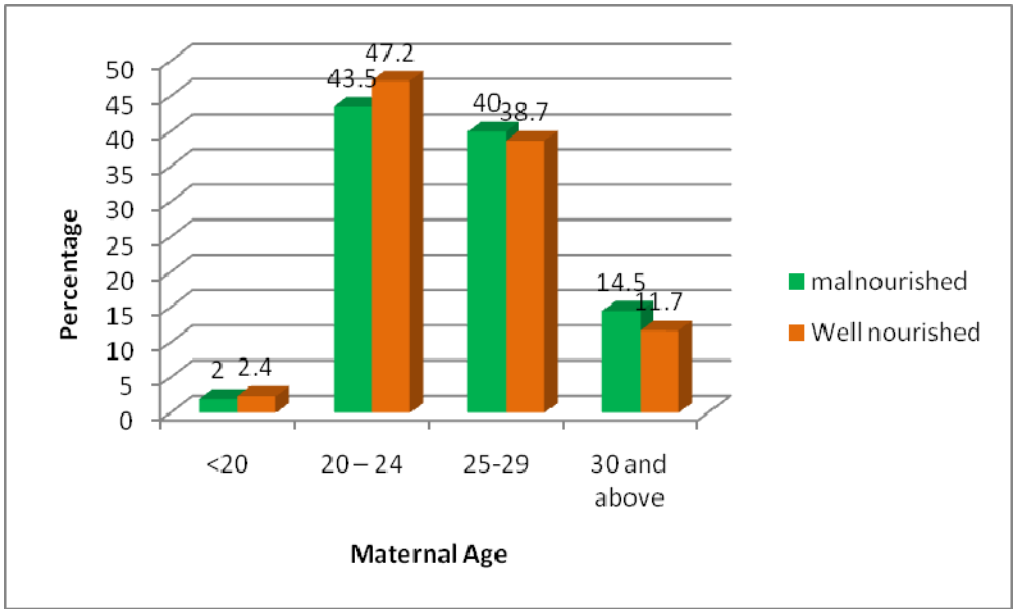
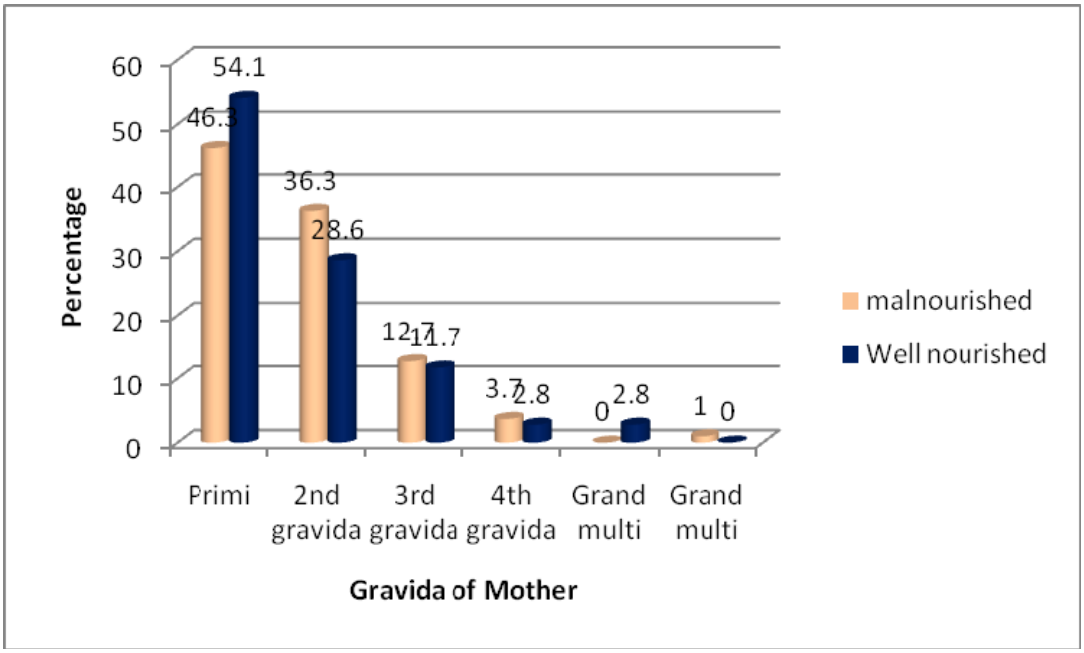


Table 15 : Association between gravida of mother and fetal malnutrition:

Gravida of mother	malnourished		Well nourished		Total	
	No	%	No	%	No	%
Primi	51	46.3	157	54.1	208	52.0
2nd gravida	40	36.3	83	28.6	123	30.8
3rd gravida	14	12.7	34	11.7	48	12.0
4th gravida	4	3.7	8	2.8	12	3.0
Grand multi	0	0	8	2.8	8	2.0
Grand multi	1	1	0	0	1	0.2
Total	**110**	**100.0**	**290**	**100.0**	**400**	**100.0**

46.3% of fetal malnutrition cases were born to primi gravida mother. 36.3% of fetal malnutrition cases were born to second gravida mother.

Bar Chart 15 : Association between gravida of mother and fetal malnutrition:



DISCUSSION

1. Female neonates were lighter than male neonates – need for separate gender specific growth charts:

The birth weight of male babies were significantly greater than the birth weight of female babies (2860.7± 447.2.> 2730.3± 437.6) since (t=2.942 degree of freedom=398 and $p<0.05$).

The length of male neonates was significantly greater than the length of the female neonates. (47.7 ± 1.9 > 47.1 ± 1.9) since (t=2.601 degree of freedom 398 and $p<0.05$).

The head circumference of male babies were significantly greater than the females (33.5 ± 1.3 > 32.9 ± 1.4) since (t=4.184 degree of freedom=398 and $p<0.001$)(table-5)

On an average, female baby were 130 gms lighter, 0.6 c.m shorter and had head circumference 0.6 c.m shorter than male babies. Similarly in Pam Thomas et al (17) study female babies were 95 gms lighter, 0.6 c.m shorter and had head circumference 0.6 c.m shorter than male babies.

Similar finding was observed by Brenner et al (11) and confirmed by Arbuckle et al (12), Pam Thomas et al(17)and Alexander et al(13).Their observation was that the degree of correction needed for gender is gestational age-dependent. These differences became larger with increasing gestational age for gender. These findings suggest a role for the

creation of new intra uterine growth curves that should be separate for male babies and female babies. Goldenberg et al (16) pointed out that it was reasonable to use sex specific standards since the difference in anthropometric measurements between two sexes was most likely due to genetic factors. Hence the current use of single intra uterine growth chart for both sexes should be changed to gender specific intra uterine growth charts to identify the genuine fetal malnutrition cases. Otherwise it will be obvious that more number of female babies will be erroneously diagnosed as fetal malnutrition compared to male babies. The confusion in definitions and methodology makes comparisons across populations very difficult. Goldenberg et al. reviewed standards for diagnosis of fetal malnutrition in the US (Goldenberg et al, 1989) and found considerable variation. The 10th percentile value based on 38 different studies and charts varied by nearly 500 grams at term and by more than 400 grams even at 32 and 36 weeks of gestation. The studies were characterized by location, source of data, sample size, exclusions, patient characteristics and the method for determining gestational age. The authors made a plea for developing a chart based on a standard US reference population. Zhang and Bowes (1995) have attempted to do that. Ideally, an international population standard ought to exist for each geographic region, and these standards should be well defined and documented allowing for comparisons. The purpose and use of these charts will differ depending on whether one

intends to use them more in a public health or in a clinical context. And these perspectives will also have a bearing on the sophistication with which the charts should be applied. According to Pam Thomas et al study the gender and race will have impact in detecting fetal malnutrition. According to Bakketeig LS et al mothers with previous history of giving birth to a small for gestational age baby will have impact on subsequent pregnancies outcome. So he strongly recommended taking this factor into account during subsequent weight for gestational age assessment in the next baby.

2. **Discrpency between Indian and international standard weight for gestational age chart – need for regional specific growth charts:**

The proportion of female small for gestational age cases as assessed by Indian standard, intra uterine growth chart in this study, was significantly greater than the proportion of males (7.3% > 2.9%) since ($t=1.98$, degree of freedom=398 and $p<0.05$). Similarly Small for gestational age as identified by Alexander et al growth chart showed 97 female newborn babies as small for gestational age and 80 male newborn babies as small for gestational age in this study. This gender difference was also significant in both numerically as well as statistically. This difference was related to the birth weight of the babies since small for gestational age was assessed by birth weights. The reason for lower birth weight of female

babies compared to male babies was more likely to be of biological reason (15).

The difficulty in using international standards like Alexander et al birth weight for gestational age percentile chart is that they had higher cut off weights at each gestational age which was significantly larger than Indian babies' mean birth weight for corresponding gestational age.

In this study 44.25% of new born babies were diagnosed as small for gestational age by Alexander et al birth weight for gestational age percentile chart. It was highly unlikely to have 44.25% of small for gestational age babies when the regional standard intra uterine growth chart identified 5% of newborn babies as small for gestational age babies. There was a significant difference between both results. This was because of higher cut off weights at each gestational age were present in international standard, weight for gestational age charts. From this analysis it is strongly recommended that a standard intra uterine growth chart which was derived from regional population would be more specific in detecting true small for gestational age babies rather than western standard intra uterine growth charts which were derived from their population which was applicable only to their own population In this regard in Indian scenario, intra uterine growth charts published by Matthews Mathai et al (29) in the study of birth weight standards for South Indian babies, they have provided intra uterine growth curves which were

separately for first born and later born male babies. Also they have provided separate intra uterine growth curves for first born and later born female babies. This would pick up genuine small for gestational age babies without any gender and birth order bias. Intra uterine growth chart which was prepared in All India institute of medical science and published in Indian pediatrics by Singh et al in 1973-1974 and later revised by P.K.Singhal et al in 1991 and published in Indian pediatrics. This intra uterine growth chart was for both sexes. Another intra uterine percentile growth curves were published by Gosh .S et al in 1971 and revised by Man Mohan et al in1990. They have given weight, length, head circumference percentile charts and percentile curves for ponderal index. They have mentioned that head circumference can be used to assess growth and maturity of the baby as a whole. Their growth charts coincided with other western standards intra uterine growth charts during the early part of gestation but differ widely at term. This was explained by Gruenwald (28) that from 28-38 weeks growth in weight is linear. The curve tends to flatten out and this flattening is due to interruption in the placental supply line as term is approached. The supply line is hampered least in population with a low incidence of growth restricting factors and most in those with a high incidence of growth restricting factors. In a country like India where growth restricting factors like poverty, malnutrition, reduced inter

pregnancy interval, maternal micro nutrient deficiency are prevalent this explanation holds good.

3. FETAL MALNUTRITION AND SGA ARE NOT SYNONYMOUS :

In a country like India where the incidence of low birth weight is around thirty percent and that too predominantly term low birth weight babies (2000-2002,World health statistics), it is highly unlikely to have 10% of new born babies born to be term small for gestational age babies. It will be at a higher level. So using 10 th percentile as cut off point underestimates the real situation and misses a lot of term malnourished babies. The concept of IUGR as defined by low birth weight for gestational age needs reappraisal since a proportion of malnourished infants will in fact have a birth weight >10th centile (7). Another draw back is that genetically small newborn babies will be wrongly diagnosed as small for gestational age babies. But their morbidity and mortality were comparable with appropriate for gestational age babies. So the weight for gestational age chart has less sensitivity and specificity. Classification as SGA and AGA will only classify the total number of observation above and below the cut off. Beyond which they have little or no meaning. But Fetal malnutrition (FM) is defined as failure to acquire adequate quantum of subcutaneous fat and muscle mass during intrauterine growth (10)(23). It is a term coined by Scott and Usher(25) to describe infants who show evidence of soft tissue wasting at birth irrespective of the specific etiology

(25) and it is independent of birth weight and gestational age(10),(23),(24),(25) and (26). It is not synonymous with either small for gestational age (SGA), (birth weight below 10th percentile for gestational age on the intrauterine growth chart)(27), or intra uterine growth restriction (IUGR). In Fetal malnutrition the subcutaneous tissues and underlying muscles are diminished and the skin of arms, legs, elbows, knees and inter scapular regions is very loose. In severe Fetal malnutrition the neonate may look "emaciated" or "marasmic" as the skin appears "several sizes" too large for the baby. Buccal and buttock fat pads are reduced and the scalp hair may be coarse, patchy, or "straight and starring" as in marasmus or even have a "Flag-Sign" as in severe protein-calorie malnutrition (Kwashiorkor). Fetal malnutrition is therefore, also a clinical diagnosis. Babies who show evidence of muscular wasting should therefore be labeled appropriately as malnourished neonates.

4. Shortcoming of Ponderal index and Mid arm circumference/head circumference:

In our study according to Ponderal index, fetal malnutrition cases were 5.8%. In Adebami et al study according to Ponderal index, fetal malnutrition cases detected were 8.1%. In Naveen sankhyan et al study fetal malnutrition cases detected by ponderal index was 8.6%. In general, Ponderal index had lower ability to detect fetal malnutrition cases. The ponderal index derived from Man Mohan et al study (52) was

comparable with Miller and Lubchenco at 10th and 50th percentile curves while 90th percentile curves from this study lagged behind the western percentile curves between 32 – 38 weeks.

The percentage of fetal malnutrition among the male babies was less than among the female babies by the assessment of ponderal index in this study .This index was calculated by the formula (weight (gms)/ (length (c.m)) 3) ×100. The main use of ponderal index is to differentiate disproportionate growth. Therefore Rohrer's ponderal index may be used to distinguish the type of the growth retardation and can be of prognostic value. At the same time while using a cut off point from ponderal index to define fetal malnutrition will only detect disproportionate growth rather than including symmetrical IUGR babies where there is normal ponderal index. Small for gestational age babies detected based on proportionalities may or may not detect all SGA babies. In acute fetal malnutrition length is spared at the expense of weight. So they will have low ponderal index. Neonates with chronic fetal malnutrition and genetically determined small babies will have normal ponderal index. Hence ponderal index missed a lot of cases of fetal malnutrition.These assessments were depending upon the anthropometric indices via, weight and length of the babies. The gender wise difference between the anthropometric indices was also reflected in the assessment. The Fetal malnutrition cases detected by weight for gestational age and Ponderal index were depending upon the

anthropometric measures of the neonates. Anthropometric variables differed significantly between male and female babies. Because of that the female fetal malnutrition cases were more than the male fetal malnutrition cases. For male babies the weight and length were significantly greater than the female babies. This difference was reflected in determining fetal malnutrition cases as more among the females than the males i.e., negatively correlated. So Ponderal indexes, weight for gestational age are not reliable in detecting true fetal malnutrition cases.

In this study, according to MAC/HC the prevalence of fetal malnutrition was 15.8%. In Adebami et al study the MAC/HC detected 12% cases of fetal malnutrition. The reason would be the difference in the prevalence of fetal malnutrition between two countries. It was 49.76% in Mehta et al study. Once again the reason for high prevalence in mehta et al study was inclusion of late preterm babies also in that study. we have studied only term babies. There was no significant difference in mid arm circumference between male and female babies. The difference was attributed to the sampling since ($t=1.120$, degree of freedom=398 and ($p>0.05$)). The drawback of MAC/HC was in those babies whose head circumference is reduced because of proportionate growth restriction, fetal malnutrition might not be identified. so MAC/HC will not detect all cases of fetal malnutrition.

5.Better assessment of Fetal malnutrition by CAN score:

There was no significant difference observed between the two sexes in the assessment of Fetal malnutrition by CAN score, since the assessment were free from anthropometric indices and maximum proportion of male (26.8%) and female (28.2%) were assessed without any significance ($p>0.05$) (table-8). Being it to be American or Indian newborn baby the clinical signs of fetal malnutrition as assessed by CAN score is universally the same. The signs in CAN score were easy to elicit. In severe fetal malnutrition accordion folds and loose skin folds in the back were easily demonstrable. Other features like prominence of ribs, neck and reduced buccal fat were readily identifiable. They detect only true fetal malnutrition babies. They correctly identified genetically small but appropriately grown babies as well nourished babies. Considering all these factors CAN score was better than other indices in identifying all cases of fetal malnutrition.

In our study CAN score identified 27.5 percentage new born babies as malnourished neonates. In Naveen sankhyan et al study (18), CAN score detected 27.97 percentage newborn term babies as fetal malnutrition. This was done in himachal pradesh, India. Deodhar et al reported 19.6 percentages of newborn babies as fetal malnutrition as assessed by CAN score. In O.J.Adebami et al study conducted in nigeria 18.8 percentage of newborn babies were malnourished as detected by CAN score method. In Sanjay Mehta et al study conducted in lady hardinge medical college

hospital, New Delhi, the Fetal malnutrition cases detected by CAN score was 40 percent. The high prevalence of fetal malnutrition as 40% in Mehta et al study was due to inclusion of late preterm babies also in that study. The fact was that fetal malnutrition frequently occurs with a variety of maternal conditions that are associated with preterm delivery. Established maternal conditions that are associated with both fetal malnutrition and preterm delivery include very low maternal pre pregnancy weight, prior preterm delivery, cigarette smoking, indirect effects of very young or advanced maternal age, and lower maternal socioeconomic status (Avery's neonatology). Our study result was same to Naveen sankhyan et al study. According to CAN score the prevalence of fetal malnutrition was 18.8% in Adebami et al study which was lower than the present study. The reason would be the different populations were studied in both the studies and the country and regional specific difference in the prevalence of fetal malnutrition. The prevalence of fetal malnutrition using international standard, Indian standard weight for gestational age charts, ponderal index ,mid arm circumference /head circumference and CAN score were 44.25%,5%,5.8%,15.8% and 27.5% respectively in this study.

6.Comparing CAN score with other methods of detecting fetal malnutrition:

The positive predictive value and negative predictive values (fetal malnutrition) of three methods (weight for gestational age, ponderal index, mid arm circumference/head circumference ratio) significantly differed with the CAN score.(Table10, 11, 12).

This interpretation revealed that the weight for gestational age charts, ponderal index and mid arm circumference/head circumference had missed the proportions of fetal malnutrition cases by 81.8%,81.8% and 51.8% respectively by diagnosing malnourished babies as well nourished.(tables-10,11 and 12).

There was a positive association between the CANscore with other methods like weight for gestational age, ponderal index and mid arm circumference/head circumference. But the association of weight for gestational age and ponderal index with CAN score were poor agreement and the association between CAN score and M.A.C. /H.C was fairly good agreement as per kappa statistics (TABLE-13).

From the findings narrated above the CAN score was the best measure for identifying the fetal malnutrition.

7. Study of maternal factors associated with cases detected as Fetal malnutrition by CAN score:

46.3% and 39% of total babies were born in the age groups 20-24 and 25-29 years respectively. 43.5% of fetal malnutrition cases were coming in the 20-24 age groups. 40% of fetal malnutrition cases were coming in the 25-29 age groups. 46.3% of fetal malnutrition cases were born to primi gravida mother. 36.3% of fetal malnutrition cases were born to second gravida mother. More number of fetal malnutrition cases were born to primi mothers. This finding substantiated the established fact . It is difficult to comment on the association of fetal malnutrition and extremes of maternal age (teen age mothers and elderly mothers) as the number of samples falling into that category is very low. Once again it is difficult to comment on the association between fetal malnutrition and grand multi para mothers as it is only 2% of the total study sample falls in grand multi para mother. 18 (16.3%) mothers of babies with fetal malnutrition were illiterate.11 mothers of babies with fetal malnutrition had obvious maternal illness complicating present pregnancy. 5 of them had severe anemia, 3 of them had pregnancy induced hypertension, 2 mothers had oligohydramnios and 1mother had asthma.

RESULTS

1. Fetal malnutrition cases detected in this study by CAN score was 27.5%. The estimated population prevalence of term fetal malnutrition cases was in the range of 23.1 - 31.9% at 95% confidence interval.
2. CAN score detected more number of fetal malnutrition cases. It optimizes care in resource limited settings by selecting deserving fetal malnutrition cases for anticipatory care and monitoring for complication.
3. According to Indian standard growth charts, estimated population prevalence of term fetal malnutrition cases was in the range of 2.9 - 7.1% at 95% C.I.
4. According to mid arm circumference/head circumference, estimated population prevalence of term fetal malnutrition cases was in the range of 12.2 - 19.4% at 95% C.I.
5. According to Ponderal index, the estimated population prevalence of term fetal malnutrition cases was in the range of 3.5 - 8.1% at 95% C.I.
6. CAN scoring and mid arm circumference were not affected by gender difference.
7. Other indicators like weight for gestational age, Ponderal index were affected by gender difference.

8. There is a need for separate gender specific weight for gestational age charts to detect genuine fetal malnutrition cases.
9. Western standard weight for gestational age charts overestimated small for gestational age babies in Indian children owing to higher cut off weights at each gestational age compared to regional standard weight for gestational age growth charts.

CONCLUSION

CAN score is useful in detecting fetal malnutrition. It is simple, easy to use and independent of factor like gender. CAN score may be used as routine screening of new born babies in detecting fetal malnutrition cases for anticipatory care and monitoring.

s.no	partu no	wt	sexmale1/female2	skin	lanugo	plantarsur	breast	ear	genitals	posture	squarwin	armreco	popang	scarfsig	heeltoear	newballard	hair	cheek	chin	chest	abdomen	arm	leg	back	buttock	canscore	length	MAC	headcir	bw*100	ht*ht*ht	pondrel	MAC/HC	modelln1/lscs2	gravidastatus	maternal age	edu	matcompli
1	85/650	2880	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	3	4	4	4	4	4	35	46.5	10	32.5	288000	100544.63	2.8643998	0.3076923	2	1	21	8	
2	164/1741	3250	2	3	3	3	3	3	3	3	3	4	3	3	3	38wk	4	3	3	3	4	3	3	4	4	31	49.2	10.2	34.2	325000	119095.49	2.7289027	0.2982456	2	2	26	12	
3	163/1740	3020	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	4	3	3	3	3	30	50.3	9	31.7	302000	127263.53	2.3730287	0.2839117	1	2	19	5	
4	162/1739	2200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	2	23	42.5	8.6	31.3	220000	76765.625	2.8658661	0.2747604	1	2	25	5	
5	78/643	3800	2	3	3	3	3	3	4	3	3	3	4	4	3	38wk	4	4	4	4	4	3	3	4	4	34	51.8	11	35.3	380000	138991.83	2.7339736	0.3116147	2	1	27	4	
6	80/645	3230	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	4	4	4	4	4	4	4	35	49.1	10.2	35	323000	118370.77	2.7287142	0.2914286	1	2	35	3	
7	165/1742	2400	1	3	3	3	3	3	4	4	3	3	4	4	3	40wk	3	3	2	3	3	3	2	2	3	24	45.5	9	32.4	240000	94196.375	2.5478687	0.2777778	2	1	24	0	
8	83/648	2250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	3	2	2	2	20	46.1	8	32.1	225000	97972.181	2.2965703	0.2492212	1	1	28	0	
9	82/647	2500	2	3	3	3	4	3	4	4	3	4	4	3	3	40wk	4	3	3	3	3	3	3	3	3	28	46.8	9	32.5	250000	102503.23	2.4389475	0.2769231	1	1	20	6	
10	166/1743	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	2	3	3	3	3	3	27	41.3	9.3	33	250000	70444.997	3.5488681	0.2818182	1	2	21	12	
11	84/649	2270	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	24	46.5	8	32.2	227000	100544.63	2.257704	0.2484472	1	2	26	12	
12	167/1744	2710	2	3	3	3	4	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	51	9.4	35	271000	132651	2.0429548	0.2685714	2	2	24	5	
13	168/1745	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	49.5	10.4	34.5	300000	121287.38	2.4734644	0.3014493	2	2	25	10	
14	170/1747	2720	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47	9.5	31.2	272000	103823	2.6198434	0.3044872	1	3	23	10	an, ol
15	169/1746	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	2	2	2	3	3	25	48.8	9.5	32	275000	116214.27	2.3663187	0.296875	1	1	31	6	
16	85/650	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	46.8	8.9	32.3	260000	102503.23	2.5365054	0.2755418	1	1	20	10	
17	171/1748	2700	1	3	3	3	3	3	3	3	3	4	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.6	9.5	33	270000	107850.18	2.503473	0.2878788	1	1	21	12	
18	79/644	1650	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	41.5	7	29.3	165000	71473.375	2.308552	0.2389078	2	1	27	0	ane, asth
19	173/1750	2870	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	3	4	3	3	3	3	28	46.9	9.8	34	287000	103161.71	2.78204	0.2882353	2	2	23	8	
20	174/1751	1780	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	3	2	2	2	2	20	42.4	7	30.3	178000	76225.024	2.3351911	0.2310231	2	1	32	8	
21	175/1752	2800	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.2	9.6	32.6	280000	105154.05	2.6627601	0.2944785	1	3	23	8	
22	86/651	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	2	2	2	3	3	23	47.3	9.2	33.8	275000	105823.82	2.5986589	0.2721893	1	2	26	8	
23	172/1749	3300	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	4	4	35	49.4	10.2	33.5	330000	120553.78	2.7373674	0.3044776	2	1	22	6	
24	87/652	3180	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	3	3	3	3	3	30	49.3	10.1	34.2	318000	119823.16	2.653911	0.2953216	1	1	22	5	
25	176/1753	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	2	4	4	3	3	3	3	29	47.6	10	33.6	300000	107850.18	2.7816366	0.297619	1	5	24	10	
26	88/653	2750	1	3	3	3	3	3	4	4	4	4	4	3	3	40wk	4	3	4	4	4	4	4	3	4	34	47.3	9.4	33.5	275000	105823.82	2.5986589	0.280597	1	2	21	8	
27	81/646	2970	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	4	3	4	34	47.4	10.3	34	297000	106496.42	2.788826	0.3029412	1	1	24	5	
28	82/647	3740	2	3	3	3	3	3	3	3	3	4	3	3	3	38wk	4	4	4	3	4	3	3	3	3	31	49	10	33.2	374000	117649	3.1789475	0.3012048	1	2	24	8	
29	172/1754	3250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	4	4	4	4	4	4	34	46.4	10.1	32.9	325000	99897.344	3.2533397	0.3069909	1	2	32	4	
30	178/1755	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	25	48	8.5	32.5	270000	110592	2.4414063	0.2615385	1	1	23	8	
31	180/1757	2300	2	3	3	3	4	3	4	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	45.9	8.5	33	230000	96702.579	2.3784267	0.2575758	1		20	6	
32	179/1756	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.5	9.4	32.9	280000	107171.88	2.6126257	0.2857143	1	2	24	10	
33	89/654	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.2	9	32	275000	105154.05	2.6152108	0.28125	1	1	28	5	
34	181/1758	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	2	3	3	3	3	3	3	29	45.7	8.7	33.2	250000	95443.993	2.6193372	0.2620482	1	1	37	0	pih
35	182/1759	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.5	9.8	32.1	300000	114084.13	2.6296384	0.305296	2	2	23	8	
36	90/655	2750	1	3	3	3	3	3	4	3	4	4	4	3	3	40wk	4	3	3	3	3	3	2	2	3	26	47.3	9.2	32.5	275000	105823.82	2.5986589	0.2830769	2	2	21	8	
37	183/1760	2000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	3	3	3	3	3	24	47.2	8.5	29.5	200000	105154.05	1.9019715	0.2881356	2	1	26	5	
38	91/656	3000	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	3	3	3	4	3	3	3	3	29	47.2	10.4	34	300000	105154.05	2.8529572	0.3058824	2	1	23	4	
39	184/1761	2360	2	3	3	3	3	4	4	4	4	4	4	3	3	40wk	3	2	2	2	2	2	2	2	2	19	46.5	8	32.1	236000	100544.63	2.3472165	0.2492212	2	1	21	5	
40	188/1765	2900	1	3	3	3	3	3	3	3	3	3	4	3	3	38wk	4	3	3	3	4	4	4	4	4	33	45.7	9.6	32.1	290000	95443.993	3.0384311	0.2990654	1	1	30	9	
41	185/1762	3030	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10	32.7	303000	117649	2.5754575	0.3058104	1	2	22	8	
42	186/1763	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	3	3	26	45.8	8.4	32.2	260000	96071.912	2.7063061	0.2608696	1	3	30	5	
43	187/1765	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.2	9.3	32.8	260000	105154.05	2.4725629	0.2835366	1	1	22	10	
44	190/1767	2200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	3	2	20	48.3	9	35	220000	112678.59	1.9524561	0.2571429	2		22	8	
45	189/1766	3500	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	3	3	3	4	4	4	4	4	33	50.8	9.8	34.1	350000	131096.51	2.6697888	0.28739	1	1	23	0	
46	191/1768	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	3	3	3	3	3	3	3	26	46.1	8.8	31.4	250000	97972.181	2.5517448	0.2802548	1		27	5	
47	193/1770	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	4	4	4	4	4	4	4	4	35	45.5	9.5	32.5	280000	94196.375	2.9725135	0.2923077	1	3	35	3	
48	192/1769	3100	2	3	3	3	4	3	4	3	4	4	4	3	3	40wk	4	3	4	4	4	4	4	4	4	35	47.5	9.5	34.5	310000	107171.88	2.8925499	0.2753623		1	26	8	

49	194/1771	2200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	24	48.7	9.5	32.8	220000	115501.3	1.9047404	0.2896341	1	1	21	10	
50	196/1773	3970	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	51.6	11	36.2	397000	137388.1	2.8896244	0.3038674	1	2	25	0	
51	195/1772	3700	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	51.5	11	34.3	370000	136590.88	2.7088193	0.3206997	1	1	27	8	pih
52	93/658	2900	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	4	4	4	4	3	3	4	32	46.5	9	32.8	290000	100544.63	2.8842914	0.2743902	1	1	25	0	
53	92/657	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	44	10	33	260000	85184	3.0522164	0.3030303	2	2	25	0	
54	94/659	2900	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	4	4	4	4	4	4	35	46.7	10	32.2	290000	101847.56	2.8473926	0.310559	1	2	26		
55	197/1774	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	25	49	8.8	33.8	270000	117649	2.2949621	0.260355	1	1	24	8	pih
56	198/1775	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	47.5	8.7	33.2	250000	107171.88	2.3327016	0.2620482	1	1	22	12	pih
57	96/661	3130	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.3	10.9	34	313000	119823.16	2.6121829	0.3205882	2	1	24	13	
58	95/660	2450	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	47.8	8.2	34.2	245000	109215.35	2.2432744	0.2397661	1	2	23	9	
59	97/662	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	24	46.7	8.8	32.8	260000	101847.56	2.5528348	0.2682927	2	2	25	8	
60	98/663	2650	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.6	9.5	34.5	265000	107850.18	2.4571124	0.2753623	1	1	22	8	
61	199/1776	3440	1	3	3	3	3	3	4	3	4	3	4	3	3	38wk	4	3	4	4	4	4	4	3	4	34	48.6	10.5	34.8	344000	114791.26	2.9967439	0.3017241	1	1	21	12	
62	99/664	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49	9.4	33.4	300000	117649	2.5499579	0.2814371	1	2	25	12	
63	200/1777	2640	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.6	9.5	34.5	264000	107850.18	2.4478402	0.2753623	2	3	25	6	
64	201/1778	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.8	9.3	33.2	260000	96071.912	2.7063061	0.2801205	1for	1	25	8	
65	204/1781	2730	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	4	4	4	3	3	31	47.2	47.2	9.3	273000	105154.05	2.5961911	5.0752688	1	2	23	6	
66	202/1779	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.6	9.5	34.5	300000	107850.18	2.7816366	0.2753623	2	1	25	5	
67	203/1780	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	3	2	2	2	2	21	49	8.8	33.8	275000	117649	2.3374614	0.260355	2	2	24	0	
68	100/665	3780	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	49.9	9	33	378000	124251.5	3.0422168	0.2727273	1	3	21	12	
69	101/666	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	2	3	3	3	3	3	27	46	9	32.9	250000	97336	2.5684228	0.2735562	2	1	27	12	
70	102/667	2750	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	3	3	3	4	3	3	3	3	29	47.8	9.7	33.9	275000	109215.35	2.517961	0.2861357	2		25	0	
71	205/1782	2000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	3	3	3	3	3	2	24	45.5	8	30.8	200000	94196.375	2.123224	0.2597403	2	1	31	5	
72	106/671	3770	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	4	3	4	34	51.8	11	35.3	377000	138991.83	2.7123896	0.3116147	1	1	24	4	
73	206/1783	2400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	24	47.5	7.9	32.8	240000	107171.88	2.2393935	0.2408537	1	3	27	8	
74	102/667	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	3	3	3	3	3	3	29	47.8	9.7	33.9	275000	109215.35	2.517961	0.2861357	2	1	25	0	
75	105/670	2180	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	3	2	2	2	2	22	45.5	8.7	33.8	218000	94196.375	2.3143141	0.2573964	1	2	23	5	
76	104/669	2900	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	4	4	4	4	4	4	4	4	35	48.6	10.1	33.2	290000	114791.26	2.5263248	0.3042169	2	1	25	12	
77	207/1784	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.2	9.7	33.6	300000	119095.49	2.5189871	0.2886905	1for	1	22	6	
78	107/672	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	49.3	10.9	34	300000	119823.16	2.5036897	0.3205882	1	3	21	10	
79	210/1787	2930	1	3	3	3	4	3	4	3	4	3	4	4	3	40wk	4	4	4	4	4	4	4	4	4	36	48.5	9.5	33	293000	114084.13	2.5682802	0.2878788	2	3	27	7	
80	209/1786	3250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	4	3	3	2	3	31	49.1	10.2	34.2	325000	118370.77	2.7456102	0.2982456	2	1	27	0	
81	108/673	3200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	4	3	3	3	3	31	47.7	10.2	33.4	320000	108531.33	2.9484573	0.3053892	1	1	21	10	
82	211/1788	3430	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	30	50.1	9.8	33.4	343000	125751.5	2.7276016	0.2934132	1	2	35	0	
83	212/1789	3120	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.4	10	33	312000	106496.42	2.9296758	0.3030303	2	1	25	0	
84	109/674	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	2	24	46.5	8	32.1	250000	100544.63	2.4864581	0.2492212	2	2	29	12	
85	213/1790	2350	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	3	2	2	2	23	45.3	8.7	31.9	235000	92959.677	2.5279778	0.2727273	1	2	25	5	
86	214/1791	1980	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	45.8	8.5	31.8	198000	96071.912	2.0609562	0.2672956	1	2	25	12	
87	215/1792	3320	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.3	9.7	33.4	332000	105823.82	3.13729	0.2904192	2	1	21	0	
88	217/1794	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49.2	9.1	35.8	300000	119095.49	2.5189871	0.2541899	2	2	22	12	
89	218/1795	2200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	2	2	2	3	23	45.5	8.5	31	220000	94196.375	2.3355464	0.2741935	1	2	36	5	an, oli
90	111/676	2500	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	2	2	3	2	2	2	2	20	45.5	8.5	32.5	250000	94196.375	2.6540299	0.2615385	2	2	28	10	
91	112/677	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.4	9.5	32.5	275000	113379.9	2.4254739	0.2923077	1	2	20	10	
92	110/675	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49.5	9.2	33.6	280000	121287.38	2.3085667	0.2738095	2	3	27	8	
93	219/1796	2400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	2	24	47.5	9	31	240000	107171.88	2.2393935	0.2903226	2	2	22	5	
94	220/1797	3580	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.4	11.2	33.2	358000	113379.9	3.157526	0.3373494	2	2	32	3	
95	221/1798	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	50.8	11	34.7	300000	131096.51	2.2883904	0.3170029	2	2	20	5	
96	222/1799	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.8	9	32.7	250000	109215.35	2.2890555	0.2752294	1	1	24	5	
97	223/1800	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	3	2	3	3	2	3	3	23	45.5	8.5	32	250000	94196.375	2.6540299	0.265625	2	1	23	6	
98	114/679	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	3	3	2	2	3	3	22	45.5	8.5	32.5	260000	94196.375	2.7601911	0.2615385	2	2	22	0	
99	224/1801	2300	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	9.6	31.5	230000	94196.375	2.4417075	0.3047619	2	3	23	8	
100	225/1802	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.7	9	33.7	260000	101847.56	2.5528348	0.2670623	2	2	25	5	
101	227/1804	2960	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.2	10.5	34	296000	111980.17	2.6433252	0.3088235	2	2	25	7	ane
102	228/1805	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	42	8.5	32.5	225000	74088	3.0369291	0.2615385	2	1	22	7	
103	226/1803	2520	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.5	32.5	252000	94196.375	2.6752622	0.2615385	1	2	25	0	

104	229/1806	2420	1	3	3	3	3	3	4	3	4	4	4	3	3	40wk	2	2	2	2	2	2	2	2	2	18	46.5	8.3	31.9	242000	100544.63	2.4068915	0.2601881	1	2	20	8	
105	115/680	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	46.6	10.3	34.2	300000	101194.7	2.9645823	0.3011696	1	2	20	12	
106	230/1807	3410	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.8	10.7	36	341000	116214.27	2.9342351	0.2972222	1	1	24	8	
107	231/1808	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.3	10.2	33.4	300000	105823.82	2.8349006	0.3053892	2	5	36	12	
108	234/1811	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	2	3	2	2	2	22	45.5	9	33.4	225000	94196.375	2.388627	0.2694611	2	3	26	9	
109	116/681	2400	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	47	8.5	32	240000	103823	2.3116265	0.265625	1	3	29	3	
110	235/1812	3200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50	10.5	35	320000	125000	2.56	0.3	1	1	30	6	ane
111	236/1813	3040	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	51.1	9.5	34	304000	133432.83	2.2782999	0.2794118	2	1	22	13	
112	237/1814	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	20	44	8	30.4	260000	85184	3.0522164	0.2631579	2	4	25	10	
113	117/682	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	48.6	8.6	35.3	250000	114791.26	2.1778662	0.2436261	1	2	30	8	
114	240/1817	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	3	2	2	2	2	20	45.5	8	30	250000	94196.375	2.6540299	0.2666667	1	1	20	10	
115	239/1816	3250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.5	10.1	34.6	325000	128787.63	2.5235344	0.2919075	1	3	29	13	
116	238/1815	3250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	4	4	4	4	4	4	4	35	49.2	10.8	36	325000	119095.49	2.7289027	0.3	2	5	26	0	
117	118/683	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.7	9.4	32.7	275000	101847.56	2.7001137	0.2874618	1for	2	24	4	
118	242/1819	2300	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	2	3	2	2	2	3	23	46.2	8.8	31.3	230000	98611.128	2.332394	0.2811502	1	1	37	3	
119	243/1820	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45	9.1	32.3	260000	91125	2.8532236	0.2817337	2	1	24	8	
120	244/1821	3250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.2	9.4	35	325000	105154.05	3.0907037	0.2685714	2	2	23	8	
121	245/1822	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.9	9.5	33.4	275000	109902.24	2.5022238	0.2844311	1	1	20	9	
122	119/684	2930	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	3	32	48	9.8	34	293000	110592	2.6493779	0.2882353	1	3	39	4	
123	246/1823	2750	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	48.1	8.7	32.3	275000	111284.64	2.4711406	0.2693498	2	1	23	10	
124	247/1824	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	27	47.8	9.8	33.6	300000	109215.35	2.7468666	0.2916667	2	2	21	10	
125	120/685	2300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	46.8	8.9	32.3	230000	102503.23	2.2438317	0.2755418	2	2	24	6	
126	248/1825	3550	2	3	3	3	3	3	4	3	3	4	4	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.3	9.8	35	355000	127263.53	2.7894874	0.28	1	1	20	10	
127	249/1826	2710	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	3	3	3	3	2	3	3	25	48.2	9.2	34	271000	111980.17	2.4200714	0.2705882	1	1	24	7	
128	250/1829	2800	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	2	3	3	3	2	3	3	25	48.7	9.8	34	280000	115501.3	2.4242151	0.2882353	1	4	26	0	ane
129	249/1828	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	2	24	47.5	8.7	33.2	250000	107171.88	2.3327016	0.2620482	2	1	24	3	
130	121/686	2670	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	48.2	9.2	34	267000	111980.17	2.3843508	0.2705882	1	1	28	8	
131	254/1831	4000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	52.5	11.5	35.5	400000	144703.13	2.7642803	0.3239437	1	2	28	7	
132	251/1828	3000	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.5	11.2	33.4	300000	114084.13	2.6296384	0.3353293	1	3	20	5	
133	252/1829	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	2	24	47.5	8.4	32.4	250000	107171.88	2.3327016	0.2592593	2	2	20	10	
134	253/1830	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	49.5	10.4	34.5	300000	121287.38	2.4734644	0.3014493	2	1	25	0	
135	255/1832	2720	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	9.5	34.8	272000	102503.23	2.6535749	0.2729885	1	3	21	12	
136	256/1833	3500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	49.2	10.2	35.3	350000	119095.49	2.9388183	0.2889518	1	3	25	0	
137	257/1834	3200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	27	49.4	9	34.7	320000	120553.78	2.6544169	0.259366	1for	1	20	8	
138	260/1837	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	2	24	45.6	8.5	31.8	250000	94818.816	2.6366075	0.2672956	1	4	27	0	
139	259/1836	2200	2	3	3	3	3	3	4	3	3	3	4	3	3	38wk	3	2	2	2	2	2	2	2	2	19	45.7	8.4	33	220000	95443.993	2.3050167	0.2545455	1	3	21	8	
140	123/688	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	8.5	322	225000	94196.375	2.388627	0.0263975	1	2	24	7	
141	262/1839	3110	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	48	9.8	34.9	311000	110592	2.8121383	0.2808023	1for	1	27	8	
142	261/1838	3380	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50.4	9.3	35.1	338000	128024.06	2.6401287	0.2649573	2	1	29	8	
143	263/1840	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.5	10	33	300000	107171.88	2.7992419	0.3030303	2	3	19	12	
144	264/1841	2900	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	4	34	47.2	10.3	34.1	290000	105154.05	2.7578586	0.3020528	1	1	25	5	
145	125/690	2230	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	46	8.2	31.2	223000	97336	2.2910331	0.2628205	2	2	25	8	
146	124/689	2900	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46	9.3	33.2	290000	97336	2.9793704	0.2801205	1	1	23	10	
147	265/1842	1600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	7	29	160000	94196.375	1.6985792	0.2413793	1	1	26	9	
148	266/18431	3500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	52.3	9.8	34.2	350000	143055.67	2.4466	0.2865497	1	2	25	8	
149	270/1847	3340	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.5	10	33.5	334000	114084.13	2.9276641	0.2985075	1	1	37	5	
150	268/1845	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.9	9	32.2	250000	96702.579	2.5852465	0.2795031	1	3	23	12	
151	129/694	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50.2	10	33.5	300000	126506.01	2.3714289	0.2985075	1	1	29	5	
152	267/1844	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49.2	10.1	34	300000	119095.49	2.5189871	0.2970588	1	1	30	4	
153	269/1846	2300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	9.1	33	230000	94196.375	2.4417075	0.2757576	2	1	21	8	
154	127/692	3500	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.4	11	34.5	350000	128024.06	2.733861	0.3188406	2	1	27	12	
155	128/693	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.4	9.3	34.1	250000	113379.9	2.2049763	0.2727273	2	1	20	12	
156	271/1848	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	24	48.4	9.3	34.1	250000	113379.9	2.2049763	0.2727273	2	1	21	5	
157	130/695	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	46.5	11	33.2	300000	100544.63	2.9837498	0.3313253	1	1	24	6	
158	272/1849	3430	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	3	33	49.5	12	35.3	343000	121287.38	2.8279943	0.3399433	1	1	21	12	
159	273/1850	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	4	4	3	3	3	3	30	44.5	10.3	32.8	280000	88121.125	3.1774447	0.3140244	1	1	19	10	

160	131/696	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.4	9.7	31	250000	106496.42	2.3474967	0.3129032	1	2	25	8	
161	274/1851	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.2	9.3	33.8	250000	105154.05	2.3774643	0.2751479	2	1	23	5	
162	132/697	4140	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.4	11.5	34.8	414000	128024.06	3.2337671	0.3304598	2	2	27	8	
163	276/1853	2900	2	4	3	3	3	3	4	3	4	4	4	3	3	40wk	3	3	3	3	3	3	3	3	3	27	46.5	10	33.1	290000	100544.63	2.8842914	0.3021148	1	1	22	8	
164	275/1852	3400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	51	10.1	37	340000	132651	2.5631167	0.272973	1	1	29	6	
165	133/698	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9.5	33	270000	100544.63	2.6853748	0.2878788	1	1	25	13	
166	277/1854	2650	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	4	4	4	4	3	3	3	3	31	46.6	10	32	265000	101194.7	2.6187143	0.3125	2	2	19	10	
167	278/1855	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	46	8	32.7	225000	97336	2.3115805	0.2446483	1	1	25	10	
168	279/1856	2250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	2	2	2	2	2	20	45.5	8	32.1	225000	94196.375	2.388627	0.2492212	1	2	29	5	
169	280/1857	3170	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	49.5	10.4	34.5	317000	121287.38	2.6136273	0.3014493	2	1	26	10	
170	281/1858	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.5	11.3	35.4	300000	128787.63	2.3294164	0.319209	2	1	25	6	
171	282/1859	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47	9.1	33.1	260000	103823	2.5042621	0.2749245	2	1	21	7	
172	283/1860	3500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.3	10.2	35.1	350000	105823.82	3.307384	0.2905983	1	2	24	8	
173	284/1861	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	43.5	8	32.2	225000	82312.875	2.7334727	0.2484472	2	1	24	4	
174	285/1862	1790	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	41.5	7	29	179000	71473.375	2.5044291	0.2413793	2	3	30	0	
175	134/659	2200	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	42.5	8.6	32.2	220000	76765.625	2.8658661	0.2670807	2	1	24	5	
176	286/1863	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.2	9.3	33	300000	119095.49	2.5189871	0.2818182	2	2	23	10	
177	287/1864	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	9.5	34.8	260000	102503.23	2.5365054	0.2729885	2	1	21	7	
178	293/1870	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	2	2	2	2	2	21	48.4	9.2	34.6	275000	113379.9	2.4254739	0.265896	2	1	37	5	
179	290/1867	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.9	10.2	34	300000	103161.71	2.9080557	0.3	2	1	35	6	
180	289/1866	2920	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48	9.4	34	292000	110592	2.6403356	0.2764706	1	2	23	9	
181	288/1865	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.1	9.6	34	300000	111284.64	2.6957898	0.2823529	1	2	21	8	
182	291/1868	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	47.6	8	33.4	260000	107850.18	2.4107517	0.239521	2	1	27	5	
183	292/1869	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.3	10	33.2	280000	105823.82	2.6459072	0.3012048	2	1	23	8	
184	134/699	2980	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	10	32.3	298000	102503.23	2.9072254	0.3095975	1	1	32	8	
185	294/1871	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	46	8.3	32.1	250000	97336	2.5684228	0.258567	1	6	25	9	
186	296/1873	2400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	44.5	8.5	32.1	240000	88121.125	2.723524	0.2647975	2	1	23	9	
187	295/1872	3400	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.5	10.2	34.9	340000	114084.13	2.9802569	0.2922636	2	1	26	4	
188	136/701	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.6	9.6	32.5	300000	94818.816	3.163929	0.2953846	1	1	19	8	
189	135/700	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.4	9.8	33.8	300000	120553.78	2.4885158	0.2899408	2	3	27	8	
190	297/1874	3470	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50.1	10.2	34.3	347000	125751.5	2.7594104	0.2973761	1	2	29	12	
191	298/1875	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.3	9.6	33.2	300000	112678.59	2.6624402	0.2891566	1	1	21	8	
192	299/1876	2910	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.4	9.5	33.1	291000	113379.9	2.5665924	0.2870091	2	1	24	8	
193	137/702	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49.1	11	34.5	350000	118370.77	2.956811	0.3188406	1	1	24	10	
194	300/1877	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	9.3	30.2	250000	94196.375	2.6540299	0.307947	1	2	30	0	
195	301/1878	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	3	2	2	2	2	21	46.5	9.2	31.3	260000	100544.63	2.5859165	0.2939297	1	2	21	13	
196	138/703	3490	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.5	10.3	34.5	349000	121287.38	2.8774635	0.2985507	2	1	24	5	
197	139/704	2300	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	2	2	3	2	2	2	2	20	47.2	8	31.8	230000	105154.05	2.1872672	0.2515723	2	1	25	5	
198	140/705	3030	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.4	10	32.6	303000	113379.9	2.6724313	0.3067485	2	1	22	0	
199	304/1881	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	3	2	2	2	2	2	2	20	47.3	8.9	31.2	250000	105823.82	2.3624171	0.2852564	1	1	22	10	
200	303/1880	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	3	2	2	2	2	20	46.4	8.3	31.2	250000	99897.344	2.502569	0.2660256	1	1	21	8	
201	306/1883	3290	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.3	9.5	35.4	329000	112678.59	2.9198094	0.2683616	2	1	23	7	
202	305/1882	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.4	34	225000	94196.375	2.388627	0.2470588	1	1	22	7	pih
203	307/1884	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.8	10.5	33.7	350000	109215.35	3.2046777	0.3115727	2	1	24	8	
204	141/706	2350	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.5	32	235000	94196.375	2.4947881	0.265625	2	3	27	8	
205	142/707	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	26	49.2	9.4	34	300000	119095.49	2.5189871	0.2764706	1for	4	36	5	
206	308/1885	2010	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	1	2	2	2	2	2	2	17	44.5	7.8	31	201000	88121.125	2.2809514	0.2516129	1	3	24	5	
207	309/1886	3360	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.4	11	34	336000	113379.9	2.9634881	0.3235294	2	1	27	0	
208	310/1887	3250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	46.8	11	35.5	325000	102503.23	3.1706317	0.3098592	2	1	23	6	
209	311/1888	3520	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	50.3	9.8	35	352000	127263.53	2.7659142	0.28	2	1	21	11	
210	312/1889	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	4	4	3	3	3	29	46.2	10.1	30.8	275000	98611.128	2.7887319	0.3279221	1	1	22	5	pih
211	314/1891	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.5	9.6	31.9	275000	107171.88	2.5659717	0.3009404	2	1	23	0	
212	315/1892	2500	2	3	3	3	3	3	4	3	4	3	4	3	3	38wk	3	3	3	3	3	3	2	2	2	24	46.2	8.5	32.5	250000	98611.128	2.5352108	0.2615385	1	1	23	0	
213	316/1893	3100	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.7	9.8	32.5	310000	115501.3	2.6839524	0.3015385	2	3	23	12	
214	317/1894	2000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	46.2	8.5	32.5	200000	98611.128	2.0281687	0.2615385	2	2	25	8	
215	143/708	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.4	10	32.6	300000	113379.9	2.6459715	0.3067485	2	1	30	7	

216	146/711	4000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.9	9.8	33	400000	124251.5	3.2192771	0.2969697	1	1	27	8	
217	321/1898	2900	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	3	25	46.7	9.5	32.3	290000	101847.56	2.8473926	0.2941176	1for	1	28	12	
218	322/1899	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	2	2	2	2	2	21	45.3	9.2	33.6	250000	92959.677	2.6893381	0.2738095	1	1	23	0	
219	318/1895	2900	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	3	33	45.7	9.6	32.9	290000	95443.993	3.0384311	0.2917933	1	1	22	5	pih
220	144/709	2300	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	2	3	2	3	2	2	3	23	43	9.6	31.3	230000	79507	2.892827	0.3067093	1	1	35	8	
221	319/1896	3690	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	3	33	50.8	9.8	34.1	369000	131096.51	2.8147202	0.28739	1	1	27	12	
222	320/1897	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.7	9.8	32.5	300000	115501.3	2.5973733	0.3015385	2	1	27	6	
223	324/1901	2700	2	3	3	3	4	4	4	4	4	4	4	3	3	40wk	3	3	3	3	3	3	2	3	3	26	45.8	8.9	34	270000	96071.912	2.8103948	0.2617647	2	2	20	8	
224	323/1900	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.4	10.3	34.5	300000	120553.78	2.4885158	0.2985507	1	1	21	10	
225	146/711	3930	1	3	3	3	3	3	4	3	3	4	4	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.4	11.2	33.2	393000	113379.9	3.4662227	0.3373494	1	2	27	8	
226	145/710	2780	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.7	9	33.2	278000	95443.993	2.912703	0.2710843	2	1	25	6	
227	326/1903	3400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	25	50.4	9.3	35.1	340000	128024.06	2.6557507	0.2649573	1	4	29	0	
228	325/1902	2820	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9.1	33.5	282000	100544.63	2.8047248	0.2716418	1	2	24	5	
229	147/712	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	46.2	8.5	32.5	260000	98611.128	2.6366193	0.2615385	1	1	27	12	
230	327/1904	3040	1	3	3	3	4	3	4	3	3	3	4	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48	10	33.9	304000	110592	2.7488426	0.2949853	1	2	21	10	
231	328/1905	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	45.5	8.8	30.9	250000	94196.375	2.6540299	0.2847896	1	2	26	7	
232	330/1907	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	44	10	32.6	270000	85184	3.1696093	0.3067485	1	2	28	12	
233	331/1908	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	9.6	33.2	300000	117649	2.5499579	0.2891566	1	3	23	7	
234	329/1906	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	3	3	3	33	50.8	9.8	34.1	350000	131096.51	2.6697888	0.28739	2	1	23	10	
235	332/1909	3630	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	51.5	11	34.3	363000	136590.88	2.6575714	0.3206997	2	1	23	12	
236	333/1910	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	45.7	9.4	32.7	250000	95443.993	2.6193372	0.2874618	2	5	27	6	
237	337/1914	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10	32.7	300000	117649	2.5499579	0.3058104	1	2	20	8	
238	1/713	3230	1	3	3	3	4	3	4	3	3	3	4	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49	10	34.5	323000	117649	2.7454547	0.2898551	2	1	25	8	
239	1 1912	2000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	46.5	8.1	31.3	200000	100544.63	1.9891665	0.2587859	2	3	25	13	
240	2 1913	2400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	44.5	8.6	32.7	240000	88121.125	2.723524	0.2629969	1	2	24	8	pih
241	3 1914	3200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.4	10.3	34.5	320000	120553.78	2.6544169	0.2985507	1	1	28	13	
242	4 1915	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9.3	32.8	275000	100544.63	2.7351039	0.2835366	1	2	25	8	
243	3/715	2200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	44.5	8.3	30.2	220000	88121.125	2.4965637	0.2748344	2	2	35	5	
244	5 1916	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9	33.4	270000	100544.63	2.6853748	0.2694611	2	1	29	0	
245	6 1917	2900	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	3	3	3	2	2	3	2	23	47.9	9.2	33.8	290000	109902.24	2.6387088	0.2721893	1	1	26	10	
246	7 1918	3100	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	49	9.4	33.4	310000	117649	2.6349565	0.2814371	1	1	23	10	
247	8 720	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	10	31.4	250000	94196.375	2.6540299	0.3184713	1	1	26	0	
248	9 1920	3400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.9	10.8	35	340000	116930.17	2.9077184	0.3085714	1	1	24	10	
249	8 1919	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	43.7	9.2	33.8	250000	83453.453	2.9956819	0.2721893	1	1	22	9	ane
250	11 1922	3560	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	3	34	48.6	10.5	34.8	356000	114791.26	3.1012815	0.3017241	1	1	24	8	
251	6 718	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.6	9	31.7	250000	101194.7	2.4704852	0.2839117	1	2	26	8	
252	7 719	2660	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	9.8	33	266000	102503.23	2.5950401	0.2969697	2	2	28	10	
253	12 1923	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.9	9.8	32.7	270000	109902.24	2.4567288	0.2996942	1	2	36	0	ane
254	14/1925	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	3	34	49.3	10.9	34	300000	119823.16	2.5036897	0.3205882	2	1	29	7	
255	13/1924	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	9.1	31.3	250000	94196.375	2.6540299	0.2907348	1	2	24	8	
256	15/1926	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	3	2	3	2	2	3	24	47	9.3	32	250000	103823	2.4079443	0.290625	2	2	23	13	
257	17/1928	2810	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.1	9.8	32.7	281000	97972.181	2.8681611	0.2996942	1	2	19	8	
258	18/1929	3170	1	3	3	3	3	3	4	3	3	3	4	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.3	10.4	34.6	317000	105823.82	2.9955449	0.300578	1for	1	23	9	
259	19/1930	2500	1	3	3	3	3	3	3	3	3	3	3	4	3	38wk	2	2	2	2	2	2	2	2	2	18	48.8	8.1	30.6	250000	116214.27	2.1511988	0.2647059	2	2	21	7	
260	20/1931	2900	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	47.6	10.1	32.3	290000	107850.18	2.6889154	0.3126935	1	1	23	8	
261	16/1927	2930	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	46.9	10.2	34	293000	103161.71	2.8402011	0.3	2	1	24	7	
262	9 721	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49.5	9.2	33.6	280000	121287.38	2.3085667	0.2738095	2	2	22	10	
263	8 720	3180	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49.5	10	33.3	318000	121287.38	2.6218722	0.3003003	2	2	26	0	
264	11 723	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	4	35	47.4	10	33	300000	106496.42	2.816996	0.3030303	1	1	23	9	
265	10 722	2000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	2	2	2	2	23	45.5	8.5	32	200000	94196.375	2.123224	0.265625	2	4	21	5	
266	12 724	2790	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	48.2	10.5	34	279000	111980.17	2.4915126	0.3088235	2	3	21	8	ane
267	22/1933	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	48.8	8.1	30.6	250000	116214.27	2.1511988	0.2647059	1for	2	20	0	
268	23/1934	2200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	3	3	2	2	24	44.5	8.4	33.8	220000	88121.125	2.4965637	0.2485207	1	2	30	0	
269	13/725	2750	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	47.3	9.2	33.8	275000	105823.82	2.5986589	0.2721893	1	1	24	6	
270	24/1935	2400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	9.3	31.2	240000	102503.23	2.3413896	0.2980769	1	1	23	5	
271	28/1939	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46	9.3	33.2	280000	97336	2.8766335	0.2801205	2	2	22	10	

272	26/1937	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.7	9.4	33.2	270000	115501.3	2.337636	0.2831325	2	1	27	9	
273	27/1938	2000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	3	2	2	2	23	45.5	8.9	31.8	200000	94196.375	2.123224	0.2798742	2	1	21	9	
274	14/726	3040	2	4	3	3	3	3	4	3	4	4	4	3	3	40wk	4	3	3	3	4	3	3	3	3	29	48	10	33.9	304000	110592	2.7488426	0.2949853	2	2	23	8	
275	25/1936	2900	1	3	3	3	4	3	4	3	3	3	4	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47	9.6	33.4	290000	103823	2.7932154	0.2874251	2	1	23	6	
276	31/1942	2980	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.2	10.3	34.1	298000	105154.05	2.8339375	0.3020528	1	1	23	10	
277	29/1940	2000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	2	24	43.5	8.1	30.7	200000	82312.875	2.4297535	0.2638436	2	1	29	4	
278	30/1941	2770	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	2	2	2	3	2	21	45.5	8.8	31.3	277000	94196.375	2.9406652	0.2811502	2	1	25	0	
279	32/1943	2400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	3	2	2	2	2	21	46.7	9.2	33	240000	101847.56	2.3564629	0.2787879	1	1	28	9	
280	33/1944	2940	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48	9.5	32.5	294000	110592	2.6584201	0.2923077	1	1	25	5	
281	34/1945	2200	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	2	2	2	3	3	2	2	2	21	45	8.7	32	220000	91125	2.4142661	0.271875	2	1	19	8	
282	43/1954	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.9	9	33.9	300000	116930.17	2.5656339	0.2654867	1	1	28	12	
283	41/1952	3320	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50.2	11	34.8	332000	126506.01	2.6243813	0.316092	1	1	25	6	
284	37/1948	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.2	9.7	32.8	260000	105154.05	2.4725629	0.2957317	1	1	28	0	
285	38/1949	2720	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	25	48.7	9.7	32.8	272000	115501.3	2.3549518	0.2957317	1	1	22	13	
286	36/1947	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	50.2	10.5	35.3	350000	126506.01	2.766667	0.2974504	1	3	25	5	
287	35/1946	2200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	3	3	3	3	2	2	2	2	22	44.5	8.8	29.8	220000	88121.125	2.4965637	0.295302	1		25	5	
288	40/1951	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	3	3	2	2	24	43.5	8.9	32.8	260000	82312.875	3.1586796	0.2713415	1	1	18	5	
289	39/1950	3600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47.3	9.7	33.4	360000	105823.82	3.4018807	0.2904192	2	2	30	13	
290	15/727	2760	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	3	3	2	2	2	2	20	45.5	8.9	32	276000	94196.375	2.9300491	0.278125	1	1	25	5	ane
291	42/1953	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	3	3	34	49.3	10.9	34	300000	119823.16	2.5036897	0.3205882	2	2	25	12	
292	17/729	2520	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.9	32	252000	94196.375	2.6752622	0.278125	2	5	28	5	
293	46/1957	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.6	9.5	33.8	300000	114791.26	2.6134395	0.2810651	1	1	28	0	ane
294	18/730	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	3	2	2	2	2	3	22	45.5	9	33	250000	94196.375	2.6540299	0.2727273	1	1	21	5	
295	47/1958	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46	9.5	32.6	280000	97336	2.8766335	0.291411	2	2	25	12	
296	19/731	2780	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9.8	33.3	278000	100544.63	2.7649414	0.2942943	1	2	25	0	
297	48/1959	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45	9.2	32.9	250000	91125	2.7434842	0.2796353	1	2	27	5	
298	44/1960	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	3	3	3	2	2	24	48	9	33.5	250000	110592	2.2605613	0.2686567	1	2	25	7	
299	21/733	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49	9.5	34.9	300000	117649	2.5499579	0.2722063	1	1	23	8	
300	51 1962	2580	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.7	9.8	32	258000	95443.993	2.703156	0.30625	1	2	23	0	ane
301	53/1964	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.2	9.7	33	300000	111980.17	2.6790458	0.2939394	1	1	31	5	
302	55/1966	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.9	9	33.9	300000	116930.17	2.5656339	0.2654867	1	1	24	8	
303	54/1965	2750	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	3	4	3	3	3	3	30	48	9.5	33.2	275000	110592	2.4866175	0.2861446	1	2	30	12	
304	22/734	2250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45	8.3	31.8	225000	91125	2.4691358	0.2610063	2	2	27	5	
305	56/1967	3500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	50.2	11	33.5	350000	126506.01	2.766667	0.3283582	2	1	27	10	
306	57/1968	3250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10.4	35	325000	117649	2.7624544	0.2971429	2	1			
307	58/1969	2500	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	44.5	9.4	31.5	250000	88121.125	2.8370042	0.2984127	2	3	23	13	
308	60/1971	2620	1	4	3	3	3	3	4	3	3	4	4	3	3	40wk	3	3	3	3	3	3	3	3	3	27	47.8	10	32.8	262000	109215.35	2.3989301	0.304878	1	2	24	8	
309	59/1970	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	3	3	3	3	3	24	48	9.8	33.5	250000	110592	2.2605613	0.2925373	2	1	27	10	
310	61/1972	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	45.5	9.4	32	260000	94196.375	2.7601911	0.29375	2	2	26	8	
311	62/1973	2030	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	2	3	2	2	2	21	45	8.2	30.7	203000	91125	2.2277092	0.267101	2	2	20	10	
312	63/1974	3560	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	49	10.5	34.5	356000	117649	3.0259501	0.3043478	2	3	27	0	
313	64/1975	3500	2	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	3	32	51	11.2	34.9	350000	132651	2.6385025	0.3209169	1	3	25	8	
314	65/1976	2200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	19	44.5	8	32	220000	88121.125	2.4965637	0.25	2	1	33	5	oli
315	66/1977	2690	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	3	2	3	3	2	2	3	3	24	46	9.6	31.7	269000	97336	2.7636229	0.3028391	1	3	27	5	
316	24/736	3200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.8	10.2	35.5	320000	123505.99	2.5909674	0.2873239	2	2	30	8	
317	25/737	2750	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.7	9.3	34	275000	108531.33	2.5338305	0.2735294	1	1	26	5	
318	67/1978	2250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.9	32.4	225000	94196.375	2.388627	0.2746914	2	2	23	9	
319	68/1979	3370	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50.3	9.8	35.6	337000	127263.53	2.6480486	0.2752809	1	2	29	5	
320	69/1980	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	2	3	2	3	1	25	49	8.9	33.2	250000	117649	2.1249649	0.2680723	2	2	23	12	an, oli
321	70/1981	3000	2	4	3	3	4	3	4	3	3	4	4	3	3	40wk	4	4	4	4	4	4	4	4	4	36	49	9.5	34.9	300000	117649	2.5499579	0.2722063	2	2	24	10	
322	74/1985	2980	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.6	9.5	33	298000	122023.94	2.4421438	0.2878788	2	3	23	5	
323	75/1986	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	3	26	46.5	9.8	34.2	280000	100544.63	2.7848331	0.2865497	2	2	27	8	
324	77/1988	3400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.4	10.8	35.5	340000	113379.9	2.9987678	0.3042254	2	1	39	6	
325	71/1982	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.2	8.9	33	260000	111980.17	2.3218397	0.269697	2	3	24	8	
326	72/1983	3480	1	4	3	3	3	3	4	4	3	3	4	3	3	40wk	3	3	3	3	3	3	3	3	3	27	51.5	10.7	34	348000	136590.88	2.5477544	0.3147059	1	1	24	8	

327	73/1984	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	3	3	2	3	24	47.5	8.8	32.1	260000	107171.88	2.4260096	0.2741433	2	3	25	13	
328	26/738	2600	2	3	3	3	4	3	4	4	3	3	4	3	3	40wk	3	3	3	3	3	3	3	2	3	26	47.5	9.5	31.5	260000	107171.88	2.4260096	0.3015873	1	2	25	5	
329	76/1987	3420	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	50.7	11.2	35.7	342000	130323.84	2.624232	0.3137255	2	1	34	5	
330	27/739	2750	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	44.5	10	32	275000	88121.125	3.1207046	0.3125	1	1	21	9	
331	28/740	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	2	2	25	46	10	32	250000	97336	2.5684228	0.3125	1	1	22	5	
332	78/1989	3300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10.5	34.5	330000	117649	2.8049537	0.3043478	2	2	23	5	
333	79/1990	2800	2	3	3	3	4	3	4	4	3	4	4	3	3	40wk	4	4	3	3	4	3	3	3	3	30	48	10.2	33.5	280000	110592	2.5318287	0.3044776	2	1	23	10	
334	80/1991	1500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	48	6.7	31	150000	110592	1.3563368	0.216129	1	2	30	0	
335	31/743	2500	2	3	3	3	4	3	4	3	3	3	3	3	3	38wk	4	4	3	3	4	3	3	3	3	30	45	9	32.9	250000	91125	2.7434842	0.2735562	2	1	20	10	
336	82/1993	3300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.8	10.2	35.5	330000	123505.99	2.6719351	0.2873239	2	2	31	12	
337	83/1994	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.3	8.6	31.6	260000	105823.82	2.4569138	0.2721519	2	4	28	0	
338	84/1995	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	47	9.5	32.6	300000	103823	2.8895331	0.291411	1	3	31	12	
339	86/1997	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	44	10	32.6	280000	85184	3.2870023	0.3067485	1	1	27	0	
340	81/1992	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.8	10.1	32.3	280000	109215.35	2.5637421	0.3126935	1	2	29	5	
341	87/1998	3700	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	52.5	11.5	35.5	370000	144703.13	2.5569593	0.3239437	1	3	28	5	
342	85/1996	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	3	3	3	2	3	25	47.6	8.8	33	260000	107850.18	2.4107517	0.2666667	2	1	27	5	
343	93/2004	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	2	2	2	2	2	2	21	45.7	9.5	33.3	250000	95443.993	2.6193372	0.2852853	1	1	29	10	
344	88/1999	2690	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.6	9.9	34.2	269000	107850.18	2.4942008	0.2894737	1	2	29	5	
345	89/2000	3080	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.3	10.9	36.9	308000	112678.59	2.7334386	0.295393	1	1	27	6	
346	32/744	2900	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	10	33	290000	102503.23	2.8291791	0.3030303	1	1	35	12	
347	90/2001	2220	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	45.5	8.3	32.1	222000	94196.375	2.3567786	0.258567	2	2	21	8	
348	29/741	2600	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.4	9.5	34	260000	99897.344	2.6026718	0.2794118	2	5	25	5	
349	91/2002	3200	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10.4	35	320000	117649	2.7199551	0.2971429	2	1	21	8	
350	94/2005	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	43.5	9.5	33.8	280000	82312.875	3.401655	0.2810651	2	1	25	6	
351	33/745	2250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	2	3	2	2	2	2	21	43.5	8.3	32.3	225000	82312.875	2.7334727	0.2569659	1	1	26	10	
352	97/2008	2100	1	3	3	3	3	3	4	3	3	3	4	3	3	38wk	2	2	2	2	2	2	2	2	2	18	44.5	8.6	30.7	210000	88121.125	2.3830835	0.2801303	2	3	22	8	
353	95/2006	3400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	4	3	3	3	3	31	50.1	10.9	34.3	340000	125751.5	2.7037451	0.3177843	1	2	26	5	
354	98/2009	2400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	2	3	2	3	2	2	3	23	43.5	8.8	31.7	240000	82312.875	2.9157043	0.2776025	1	1	24	4	
355	96/2007	1470	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	41.5	7	29.3	147000	71473.375	2.0567099	0.2389078	2	1	22	13	
356	99/2010	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	4	3	3	3	3	29	47	9.9	34	280000	103823	2.6968976	0.2911765	2	2	22	7	
357	100/2011	2800	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.5	9.2	33	280000	114084.13	2.4543292	0.2787879	2	4	24	0	
358	102/2013	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	3	3	3	4	33	46.5	9.6	31.8	280000	100544.63	2.7848331	0.3018868	1	1	21	6	
359	101/2013	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49	9.5	34.9	300000	117649	2.5499579	0.2722063	1	2	24	0	
360	103/2014	3110	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49.5	10.4	34.5	311000	121287.38	2.5641581	0.3014493	1	1	35	7	
361	104/2015	2950	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49.2	9.1	35.8	295000	119095.49	2.477004	0.2541899	1	1	22	5	
362	105/2016	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.3	10.2	33.9	260000	105823.82	2.4569138	0.300885	1	1	25	8	ane pih
363	107/2018	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	20	45.5	9.5	32.2	250000	94196.375	2.6540299	0.2950311	1	2	20	12	
364	106/2017	2500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	48.4	9.5	33.7	250000	113379.9	2.2049763	0.2818991	2	3	32	5	
365	108/2019	2200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	46	9	32.5	220000	97336	2.260212	0.2769231	2	4	26	9	
366	34/746	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	4	4	4	4	3	4	34	50.6	9.2	34	300000	129554.22	2.3156329	0.2705882	2	3	22	8	
367	109/2020	3060	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48.2	9.7	33	306000	111980.17	2.7326267	0.2939394	2	1	23	10	
368	35/747	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	48.3	9.6	34.4	300000	112678.59	2.6624402	0.2790698	2	1	21	8	
369	110/2021	2500	1	3	3	3	3	3	4	3	3	3	4	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.8	9	33.2	250000	102503.23	2.4389475	0.2710843	1	1	27	0	
370	116/2022	2730	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.5	9.6	33.8	273000	100544.63	2.7152123	0.2840237	1	1	30	5	
371	112/2023	2700	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	2	2	3	25	46.7	9.1	32.8	270000	101847.56	2.6510207	0.277439	1	1	26	8	
372	113/2024	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	48.4	9.4	33.6	275000	113379.9	2.4254739	0.2797619	1	2	19	0	
373	114/2025	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	3	4	3	3	3	3	30	48.7	9.6	33.7	280000	115501.3	2.4242151	0.2848665	1	3	27	0	
374	115/2026	2970	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	49.2	10.2	35.3	297000	119095.49	2.4937972	0.2889518	1	2	21	8	
375	116/2027	2600	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.7	9.6	32.7	260000	101847.56	2.5528348	0.293578	1	1	29	5	
376	117/2028	2600	2	3	3	3	4	3	4	3	3	3	3	3	3	38wk	3	3	2	3	3	3	3	2	3	25	46.8	9	31	260000	102503.23	2.5365054	0.2903226	1	1	22	12	
377	37/749	3000	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	4	4	4	3	3	4	33	50	9.8	34.3	300000	125000	2.4	0.2857143	1	1	37	4	
378	118/2029	2250	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	47	7.6	33	225000	103823	2.1671499	0.230303	2	3	27	6	
379	38/750	3090	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	3	4	4	4	3	4	34	49.3	10.9	34	309000	119823.16	2.5788004	0.3205882	1	1	29	10	
380	119/2030	2800	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.3	10.2	33.9	280000	105823.82	2.6459072	0.300885	1	1	27	9	pih
381	120/2031	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	4	4	4	3	3	3	32	49	9.5	34.9	300000	117649	2.5499579	0.2722063	1	1	24	10	

382	121/2032	2480	2	3	3	3	3	3	4	3	3	3	4	3	3	38wk	3	2	2	2	3	2	2	2	2	21	46.3	9.3	34.6	248000	99252.847	2.4986689	0.2687861	2	3	21	12	
383	39/751	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48	10.2	33.5	350000	110592	3.1647859	0.3044776	2	5	30	12	
384	122/2033	2300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	2	2	3	2	2	2	2	3	22	45.5	8.6	31.4	230000	94196.375	2.4417075	0.2738854	1	1	24	5	
385	40/752	3500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	4	4	4	3	3	3	32	49	10.5	34.5	350000	117649	2.9749509	0.3043478	1	4	27	9	
386	123/2034	2200	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	46	8.2	31.9	220000	97336	2.260212	0.2570533	1	2	35	0	
387	124/2035	3500	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10.5	34.5	350000	117649	2.9749509	0.3043478	1	1	25	9	
388	125/2036	3000	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	4	3	4	4	3	4	3	3	32	48	9.8	34	300000	110592	2.7126736	0.2882353	1	3	30	8	
389	126/2037	2400	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	3	3	3	2	3	25	46.3	9.1	31.6	240000	99252.847	2.4180667	0.2879747	1	1	27	0	
390	127/2038	3030	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	4	4	4	4	4	4	4	4	4	36	48	10.2	33.5	303000	110592	2.7398003	0.3044776	1	1	27	0	
391	128/2039	2580	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.7	9.5	33	258000	101847.56	2.5331976	0.2878788	2	1	35	3	
392	41/753	2500	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.4	9.7	31.8	250000	106496.42	2.3474967	0.3050314	1	1	25	5	
393	129/2040	3250	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	50	9.6	33.2	325000	125000	2.6	0.2891566	2	4	37	0	
394	130/2041	1970	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	2	2	2	2	2	2	2	2	2	18	42.4	7	30.3	197000	76225.024	2.5844531	0.2310231	2	2	30	8	
395	42/754	2200	1	3	3	3	3	3	4	3	3	3	3	3	3	38wk	3	3	2	2	2	2	2	2	3	21	45.7	8.4	31	220000	95443.993	2.3050167	0.2709677	2	1	22	7	
396	43/756	3300	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	49.8	10.2	35.5	330000	123505.99	2.6719351	0.2873239	2	3	20	8	
397	132/2043	2550	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	46.7	10.5	32.3	255000	101847.56	2.5037418	0.3250774	2	1	22	10	
398	44/756	2400	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	2	3	3	3	2	3	25	45	9.8	33	240000	91125	2.6337449	0.2969697	2	1	20	6	
399	134/2045	2750	1	3	3	3	3	3	3	3	3	3	3	3	3	38wk	3	3	3	3	3	3	3	3	3	27	47.2	9.3	33	275000	105154.05	2.6152108	0.2818182	1	1	23	0	
400	133/2044	3100	2	3	3	3	3	3	3	3	3	3	3	3	3	38wk	4	3	3	3	3	3	3	3	3	28	49	10	32.8	310000	117649	2.6349565	0.304878	1	1	24	8	